



DEPARTMENT OF DEFENSE  
EDUCATION ACTIVITY  
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SEP - 1

Executive Services

DEPARTMENT OF DEFENSE EDUCATION ACTIVITY  
REGULATION SYSTEM TRANSMITTAL

**SUBJECT: DoDEA Manual 4800.3, "Asbestos Management Program Procedures"  
June 10, 1992 - Change 1**

**The following page changes to DoDEA Manual 4800.3, "Asbestos Management Program Procedures," June 10, 1992, have been authorized.**

**Remove: Pages 3 and 4, and page 1 of enclosure 1  
Insert: Attached replacement pages**

**Changes are indicated by marginal asterisks.**

  
**Marilee Fitzgerald  
Chief, Executive Services Division**

**Attachment:  
As stated**

DEFINITIONS

<b>Abatement</b>	Procedures which are implemented to eliminate the presence of asbestos fibers in air; these are removal, encapsulation, enclosure and repair.	
<b>ACBM</b>	Asbestos-containing building material. Includes 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>* ACM</b>	Asbestos-containing material. Per EPA rules, any material that contains more than 1.0 percent asbestos by weight. DoDDS defines asbestos according to the most stringent of U.S. or host nation law.	* *
<b>AHERA</b>	Asbestos Hazard Emergency Response Act. <b>An</b> act passed by Congress in October 1986 which required the EPA to promulgate regulations requiring inspection for ACBM, development of asbestos management plans, and response actions with respect to ACBM in the nation's schools.	
<b>Asbestos</b>	A group of naturally occurring minerals that separate into fibers. There are six asbestos minerals used commercially: chrysotile, amosite, crocidolite, anthophyllite, tremolite, actinolite.	
<b>Asbestos Coordinator</b>	The individual at each facility (e.g., school, district office, warehouse, regional office, etc.) who is assigned the responsibilities listed in section D, paragraph 5, of this manual.	
<b>Asbestos Management Plan</b>	Required by <b>AHERA</b> , a plan detailing the steps to be taken by a school to control potential asbestos hazards in schools.	
<b>Asbestos Management Program</b>	A program instituted by DoDDS to comply with AHERA and to administer long-term control and monitoring of ACM in its schools.	
<b>Asbestos Program Manager</b>	The person appointed at the Office of Dependents Schools to direct and monitor the Asbestos Management Program.	
<b>Containment System</b>	A separation or barrier system that prevents the movement of asbestos-contaminated air from the abatement work area into uncontaminated areas.	
<b>Encapsulation</b>	The treatment of ACM with a penetrating or	

specific microscopic analysis of samples of the material (called bulk samples) prove negative. This is because it is not possible to positively identify any material as an ACM by look, touch, or smell, only by laboratory analysis. (In DoDDS, as in most school systems, inspectors were instructed to collect bulk samples on all suspect ACM unless it was impossible to do so or they felt that sampling the material would impair its function.)

9. What is DoDDS doing about asbestos? In AHERA, Congress recognized the uniqueness of DoDDS as an overseas school system by requiring compliance with the EPA rules "to the extent feasible and consistent with the national security." Begun in 1987, the DoDDS program applies this caveat only where necessary, e.g., to avoid conflict with intergovernmental agreements or host nation sovereignty. (In cases where a rule cannot be met, an alternative is devised that still permits DoDDS to meet the intent of AHERA, i.e., to minimize exposure to airborne asbestos in our buildings.) As of the date of this manual, DoDDS has:

a. completed initial inspections of, and issued asbestos reports, management plans and special operations and maintenance (O&M) manuals for, its facilities in use between June 1987 and September 1988,

b. completed about \$20 million worth of asbestos abatement projects, and

c. completed the first triennial reinspection of facilities in use between fall 1990 and summer 1991.

10. How does the DoDDS program differ from stateside programs? It differs only in the following ways:

a. The EPA requires that ACM remove from schools be buried in EPA-approved landfills. This is not an option for DoDDS; host nations dictate how and where hazardous materials are disposed of within their borders.

b. The EPA rules incorporate by reference the worker protection regulations issued by the Occupational Safety and Health Administration (OSHA) for asbestos abatement workers. However, by intergovernmental agreement, most construction work on DoD facilities overseas is awarded to host nation contractors. OSHA has no jurisdiction over foreign workers on foreign soil; these workers and their host nation employers are subject to the host nation's laws, standards, and insurance regulations with respect to worker safety and health. (But in countries with no comparable worker protection standards, our contracts specify the use of U.S.-type protective devices and procedures.)

c. The EPA says that schools must see that their custodial/maintenance personnel who work in buildings with ACM

receive training of a specific type and duration. With limited exceptions, DoDDS does not employ such personnel. This work is performed by supporting military installations using in-house staff and/or local contract personnel. Because the people (i) are neither employees of, nor under direct contract to, DoDDS, (ii) have a high turnover rate, and (iii) often do not speak or read English well, exact compliance with this rule is difficult. What DoDDS has done is to ensure that supporting installations receive copies of the inspection reports citing the ACM located in their schools and copies of a special O&M manual specific to each school. The O&M manuals explain the procedures required to keep the ACM in good condition or to make minor repairs. In those countries where the English skills of custodial/maintenance personnel are of particular concern, the O&M manuals are produced in both English and the host nation language (i.e. Japan, Panama, Spain, Italy, and Germany).

d. In the U.S., individuals hired by schools to inspect their buildings for ACM, write management plans, design abatement projects, or perform abatement work must be accredited through EPA- or state-approved training programs. For DoDDS, however, AHERA required the DoD to develop its own contractor accreditation plan. Such a plan was developed (see encl 2); it recognizes host nation approvals for design or abatement work when host nation asbestos regulations are comparable to those of the U.S.

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e. ACM is defined in reference (b) as material which contains greater than 1.0 percent asbestos by weight. When host nation law classifies materials with a lesser asbestos content as ACM, DoDDS uses the more stringent definition.  
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#### D. RESPONSIBILITIES

1. The Director, DoDDS, will:

- a. program **funds** for the DoDDS AMP, and
- b. designate an individual to serve as the DoDDS Asbestos Program Manager.

2. The Asbestos Program Manager will:

- a. administer the overall program (e.g., develop and justify annual budgets, review and approve school management plans, and maintain an asbestos abatement multi-year plan), and
- b. maintain this manual.

Marilee:

Please sign the transmittal (Tab 1) which authorizes the change to the manual. The background sheet that Kent Craig used for the coordination is under this.

The proposed changes are at Tab 2. A copy of the present document is at Tab 3. All coordinations are at TAB 4 - no changes were received.

If you have any questions, please call me.

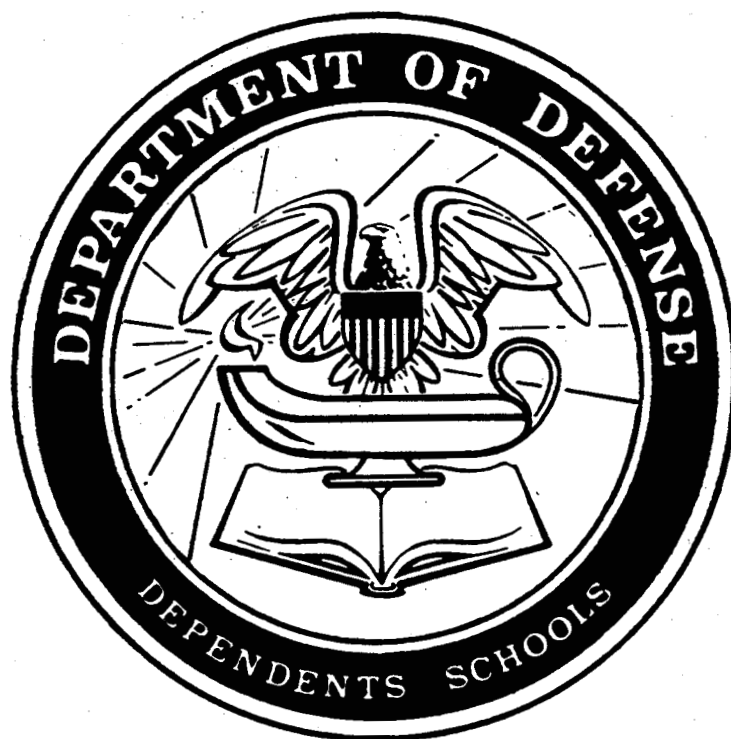
Thanks,  
Gail

~~7/31/95~~

8/14/95 *GR*

DS MANUAL 4800.3  
June 10,1992

**DEPARTMENT OF DEFENSE  
DEPENDENTS SCHOOLS**



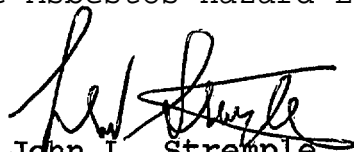
**ASBESTOS MANAGEMENT PROGRAM PROCEDURES**

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## LOGISTICS

### FOREWORD

This manual is authorized by DS Regulation 4800.2, "Department of Defense Dependents Schools Asbestos Management Program," and contains procedures to be followed in order for DoDDS activities to remain in compliance with the Asbestos Hazard Emergency Response Act of 1986.



John L. Stremple  
Director

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- REFERENCES:
- (a) Public Law 99-519, "Asbestos Hazard Emergency Response Act of 1986" (AHERA)
  - (b) 40 CFR 763, Part III, "Asbestos-Containing Materials in Schools: Final Rule and Notice"
  - (c) DoD 1342.6-M-1, "Administrative and Logistic Responsibilities for DoD Dependents Schools"
  - (d) DS Regulation 4800.2, "Department of Defense Dependents Schools Asbestos Management Program," August 7, 1991
  - (e) "Guidance on Use of 'Department of Defense Dependents Schools Asbestos Abatement Design and Construction Guidelines,'" October 1989 (hereby cancelled)

A. PURPOSE AND APPLICABILITY

This manual explains the responsibilities of, and procedures to be followed by, DoDDS administrators at all levels in the execution of the DoDDS Asbestos Management Program (AMP).

B. DEFINITIONS

See enclosure 1.

c. BACKGROUND

1. What is asbestos? It is a mineral found in certain types of rock formations around the world. When crushed, it breaks into tiny, invisible fibers. It is strong and flexible, resists heat and corrosion, and is an excellent insulator.

2. How has asbestos been used? Its use dates back to ancient Greece but was not common until this century. By mixing it with other materials, asbestos was used in about 3,000 products from the early 1900s until the 1970s. Many of these asbestos-containing materials (ACM) were used in constructing buildings, including schools. Examples include fireproofing, pipe insulation, acoustic wall and ceiling panels, vinyl asbestos floor tiles or sheeting, as well as anti-friction products such as brake linings for cars, buses, and trucks, and items like welding gloves and bunsen burner pads.

3. Why is asbestos a problem and how did we find out about it? Three specific diseases have been linked to. inhalation of asbestos fibers: asbestosis, lung cancer, and mesothelioma. The diseases do not develop right after exposure--symptoms may take 15 to 40 years to appear--and as with many carcinogens (like smoke), the more of it a person inhales the greater the risk of

developing disease. Most of what is known about asbestos diseases comes from studies of industrial workers (e.g., shipyard workers, insulation manufacturers) who were exposed to very high levels of airborne asbestos at work without respiratory protection--that is, people who were occupationally exposed.

4. What is the risk to building occupants? While scientists have not yet identified a "safe" level for exposure to airborne asbestos, the Environmental Protection Agency (EPA) has determined that prevailing asbestos levels in buildings--the levels faced by office workers, students, or teachers--are very low, based on available data. Accordingly, the health risk faced by building occupants (known as non-occupational exposure) also appears to be very low.

5. What has the government done about asbestos? The U.S. government has regulated asbestos for a number of years. Strict rules govern most operations where people could be occupationally exposed--e.g., asbestos mining, milling and manufacturing, and renovation or demolition of buildings containing asbestos materials. Progress is also being made to limit most uses of asbestos and to identify substitutes. Then there is AHERA (reference (a)).

6. Why AHERA? Although non-occupational exposure to asbestos in buildings results in a very low health risk to building occupants and, further, school buildings are not the only buildings with ACM, Congress wanted to take special measures to protect children. Reasoning that the potential for exposure to airborne asbestos should be conscientiously minimized at least during the time children spend in school, Congress enacted AHERA.

7. What does AHERA require? AHERA mandates the adoption of asbestos management programs for all elementary and secondary schools, including DoDDS, in accordance with rules issued by the EPA in October 1987 (reference (b)). In brief, school systems must (a) complete an initial inspection for all "suspect" asbestos-containing building material (ACBM), both friable and nonfriable; (b) develop plans to manage the ACBM; (c) implement the plans in a timely manner; (d) notify parent, teacher and employee groups of the findings and asbestos-related activities at least annually; (e) reinspect buildings every three years; and (f) designate an individual to oversee compliance. Much of the work must be accomplished by specially trained and accredited persons. (NOTE: Although AHERA addressed only ACBM, the EPA encourages schools to identify all suspect ACM within their buildings--e.g., stage fire curtains, bunsen burner pads, etc.)

8. What is "suspect" ACM? Any type of material known to have been made with asbestos at some point in its history is considered suspect ACM. Suspect ACM identified in a school must be assumed to contain asbestos, and managed accordingly, unless

specific microscopic analysis of samples of the material (called bulk samples) prove negative. This is because it is not possible to positively identify any material as an ACM by look, touch, or smell, only by laboratory-analysis. (In DoDDS, as in most school systems, inspectors were instructed to collect bulk samples on all suspect ACM unless it was impossible to do so or they felt that sampling the material would impair its function.)

9. What is DoDDS doing about asbestos? In AHERA, Congress recognized the uniqueness of DoDDS as an overseas school system by requiring compliance with the EPA rules "to the extent feasible and consistent with the national security." Begun in 1987, the DoDDS program applies this caveat only where necessary, e.g., to avoid conflict with intergovernmental agreements or host nation sovereignty. (In cases where a rule cannot be met, an alternative is devised that still permits DoDDS to meet the intent of AHERA, i.e., to minimize exposure to airborne asbestos in our buildings.) As of the date of this manual, DoDDS has:

a. completed initial inspections of, and issued asbestos reports, management plans and special operations and maintenance (O&M) manuals for, its facilities in-use between June 1987 and September 1988,

b. completed about \$20 million worth of asbestos abatement projects, and

completed the first triennial reinspection of facilities in use between fall 1990 and summer 1991.

10. How does the DoDDS program differ from stateside programs? It differs only in the following ways:

The EPA requires that ACM removed from schools be buried in EPA-approved landfills. This is not an option for DoDDS; host nations dictate how and where hazardous materials are disposed of within their borders.

b. The EPA rules incorporate by reference the worker protection regulations issued by the Occupational Safety and Health Administration (OSHA) for asbestos abatement workers. However, by intergovernmental agreement, most construction work on DoD facilities overseas is awarded to host nation contractors. OSHA has no jurisdiction over foreign workers on foreign soil; these workers and their host nation employers are subject to the host nation's laws, standards, and insurance regulations with respect to worker safety and health. (But in countries with no comparable worker protection standards, our contracts specify the use of U.S.-type protective devices and procedures.)

c. The EPA says that schools must see that their custodial/maintenance personnel who work in buildings with ACM

receive training of a specific type and duration. With limited exceptions, DoDDS does not employ such personnel. This work is performed by supporting military installations using in-house staff and/or local contract personnel. Because the people (i) are neither employees of, nor under direct contract to, DoDDS, (ii) have a high turnover rate, and (iii) often do not speak or read English well, exact compliance with this rule is difficult. What DoDDS has done is to ensure that supporting installations receive copies of the inspection reports citing the ACM located in "their" schools and copies of a special O&M manual specific to each school. The O&M manuals explain the procedures required to keep the ACM in good condition or to make minor repairs. In those countries where the English skills of custodial/maintenance personnel are of particular concern, the O&M manuals are produced in both English and the host nation language (i.e. , Japan, Panama, Spain, Italy, and Germany).

d. In the U.S., individuals hired by schools to inspect their buildings for ACM, write management plans, design abatement projects, or perform abatement work must be accredited through EPA- or state-approved training programs. For DoDDS, however, AHERA required the DoD to develop its own contractor accreditation plan. Such a plan was developed (see encl 2); it recognizes host nation approvals for design or abatement work when host nation asbestos regulations are comparable to those of the U.S.

Reference (b) defines ACM as material which contains greater than 1.0 percent asbestos. In DoDDS, materials found to contain from .1 to 1.0 percent asbestos are also included in the program. (This decision was made in order to be consistent with other federal rules in which certain requirements are triggered by .1 percent or more of any known carcinogen.)

#### D. RESPONSIBILITIES

##### 1. The Director, DoDDS, will:

- a. program funds for the DoDDS AMP, and
- b. designate an individual to serve as the DoDDS Asbestos Program Manager.

##### 2. The Asbestos Program Manager will:

administer the overall program (e.g., develop and justify annual budgets, review and approve school management plans, and maintain an asbestos abatement multi-year plan), and

- b. maintain this manual.

3. Regional Directors will:

a. manage the regional asbestos program in accordance with this manual,

b. ensure that the presence of ACM in a DoDDS building is considered before initiating repair, maintenance or construction projects that require regional or higher funding approval authority,

c. notify the DoDDS Asbestos Program Manager when either (i) space not previously surveyed for ACM is added (whether by lease, loan, purchase or construction) to the facility inventory, or (ii) space previously surveyed for ACM is dropped from the facility inventory, and

d. appoint an Asbestos Coordinator for the regional office building(s) and for any other facility not controlled by a superintendent or principal, e.g. , regional warehouse, and provide awareness training to all asbestos coordinators within the region.

4. District Superintendents and School Principals will:

a. notify the regional office when either (i) space not previously surveyed for ACM is added (whether by lease, loan, purchase or construction) to the facility inventory, or (ii) space previously surveyed for ACM is dropped from the facility inventory, and

b. serve as Asbestos Coordinator for their building(s) as described in paragraph 5, below. (In schools, this responsibility may NOT be delegated below Assistant Principal.)

5. Asbestos Coordinators (AC) will:

a. maintain a file of documents relating to ACM in their buildings in accordance with section E.1., below,

b. permit inspection of the asbestos management-plan by any parent, teacher, employee or other interested person in accordance with section E.1.a.(2), below,

c. serve as liaison among parents, staff, supporting installations and regional offices,

d. issue notifications to parents and/or staff in accordance with section E.3., below,

e. ensure that the presence of ACM in their building(s) is considered before initiating repair, maintenance or construction projects in accordance with section E.4., below,

f. provide information on the location of ACM in the facility, and the need to avoid disturbing it, to custodial workers and to short-term workers (e.g., telephone repair workers, repair and maintenance teams) who may come in contact with ACM in the facility,

g. arrange for, or perform, periodic surveillance once every six months and ensure that warning labels are posted in accordance with sections E.5. and E.6., respectively,

h. report fiber release episodes per section E.7., below, and

i. inform staff of ACM in their work areas and, in the case of friable or potentially friable ACM, discuss and prohibit activities likely to cause a fiber release.

6. Notifications. In the asbestos management program, various aspects of the procedures require notification to a number of parties when a fiber release episode occurs. Management at all levels is reminded that provisions of various union contracts require that employee organization representatives receive proper notice. Please ensure that the provisions of these contracts are adhered to in the management of this program.

## E. PROCEDURES

1. Records Maintenance. The original AHERA inspections of DoDDS facilities were performed by the Dynamac Corporation from summer 1987 through summer 1988. For each complete facility inspected (a school, warehouse, district or regional office or other administrative facility), Dynamac issued a Survey Report, an Asbestos Management Plan and, for those facilities where ACM was identified, a Special O&M Manual. Based on the results of Dynamac's inspections and on plans for major or minor construction and/or renovation projects, pre-abatement design visits were then conducted at some DoDDS facilities by the engineering firm of Baker/TSA. For each of these facilities, Baker/TSA issued a Pre-Design Report. Then the first triennial reinspection took place from fall 1990 through summer 1991, also conducted by Baker/TSA. For each facility reinspected, Baker/TSA issued an AHERA Reinspection Report, an Addendum to the Asbestos Management Plan, and an Addendum to the Special O&M Manual. (For facilities added to the inventory after the Dynamac inspections, Baker\TSA performed an inspection and issued an AHERA Inspection Report, an Asbestos Management Plan, and, if ACM was found, a Special O&M Manual.) IMPORTANT: Survey, pre-design, and inspection or reinspection reports are static documents describing a facility at one point in time. Management plans and special O&M manuals are dynamic; intended to be periodically updated to reflect changes caused by deterioration or damage, building additions/

deletions/renovations/repairs, or abatement projects. In particular, management plans and their addenda include tables that must be updated by pen and ink annotations and appendices where certain documents must be filed to keep the asbestos record up-to-date. (See encl 3 for a summary of document features.)

a. Existing Facilities.

(1) One copy of each applicable document listed above is to be maintained by the AC in the administrative office of the facility inspected. Record copies of correspondence or other documents related to asbestos at the facility are also to be kept, either in the applicable appendix to the management plan or, if too cumbersome, in a folder filed with the plan. In addition to the individual files at each facility, regional offices will keep one complete set of documents for all facilities in the region, and the Asbestos Program Manager will keep one master set for all DoDDS facilities.

(2) Each facility's updated management plan (which includes by reference the survey and reinspection reports and special O&M manual) must be available for inspection without cost or restriction to workers before work begins in any area of the building(s). In addition, the plan must be available for public inspection within five working days following a request for examination. The AC may charge a reasonable cost (\$3.50 for six pages or less, \$.10 for each additional page) to make copies requested by individuals or non-government organizations, except that no charge is assessed for one copy requested by the exclusive representative (union). If more than one copy is requested, the charge will be as shown above.

b. Closed Facilities. When a DoDDS facility is to close, the AC will send the asbestos reports, plans, and other related documents that had been kept at the facility to the cognizant regional office. The regional office will compare these with the documents in its own files for that facility, discard duplicates, and forward a complete, consolidated file to the Asbestos Program Manager in the Office of Dependents Schools (ODS) Logistics Division. The facility's asbestos record will then be retained for 40 years.

2. New Facilities. When a "new" facility is added to the building inventory (whether by lease, loan, purchase or construction), EPA requires that it, too, be inspected for ACBM prior to occupancy or, in urgent situations, within 30 days of occupancy. (EPA exempts buildings constructed after October 12, 1988, if the architect or project engineer responsible for its construction signs a statement that no ACBM was specified as a building material in any construction document for the building. However, in DoDDS such buildings will routinely be included in the

reinspection cycle that follows beneficial occupancy.) ACs will apprise their regional offices of the buildings in use, in whole or in part, at the beginning of each school year and provide prompt notice of any change. Regional offices will, in turn, notify the Asbestos Program Manager when space not previously surveyed for ACM is to be added to the inventory so that arrangements may be made for inspection. (EXCEPTION: Space occupied on an emergency basis, if that occupation is not expected to exceed 30 days, need not be reported to the Asbestos Program Manager. Example: A storm causes roof damage and flooding in two classrooms. It will take three weeks for the installation engineers to repair the roof and clean the rooms. There's no extra space in the school so the base commander makes two rooms in the base chapel available as temporary classrooms.)

3. Annual Notification Requirement. Reference (b) requires written annual notification to parent, teacher, and employee organizations of the availability of management plans for review; it also requires written annual notification to "workers and building occupants, or their legal guardians...about inspections, response actions, and post-response action activities, including periodic reinspection and surveillance activities that are planned or in progress." Both requirements can be satisfied with one notice. ACs are to issue such a notification by November 15 each year. The notice may be in the form of a memo given to each employee and sent home with each student, or an item with the same information published in the school newsletter, or a combination of both. See encl 4 for samples and instructions. (NOTE : Even if no ACM was identified in a facility, notification of the fact that the facility was inspected for ACM is still required annually.) The AC must send one copy of each notice to the regional office; regional offices are to send a copy of each notice in a consolidated package to the Asbestos Program Manager.

Project Requests. Disturbing ACM is to be avoided (e.g., do not cut, hammer, drill, sand, etc.) because it might release asbestos fibers into the air. Therefore, each facility's special O&M manual describes the do's and don'ts of maintaining ACM in that facility and, in paragraph 3.7., describes a recommended maintenance and repair request permit system whose purpose is to ensure that the potential for disturbing existing ACM is assessed before a project begins.

a. School-Requested Maintenance, Repair or Minor Construction. There is a sample request format in the special O&M manual; however, DoDDS activities are required to use forms prescribed by supporting installations when submitting requests for maintenance, repair or minor construction. Before initiating any work request, ACs are to check the current records for the presence of ACM. If any ACM is present in the proposed work area, the AC must annotate the work request with a statement that ACM is in the work area and must not be disturbed without proper



precautions. The types and locations of ACM remaining in a DoDDS facility are summarized in Table 6.1 of the facility's management plan addendum; greater detail is in Section 4 of the reinspection report. ( NOTE: Regional offices may elect to control all asbestos-related projects, regardless of dollar value. In that case, ACs will follow regional instructions. )

b. Regionally Funded or Approved Maintenance, Repair, and Minor or Major Construction. Paragraph 4.a., above, also applies to regional office buildings and other regionally controlled buildings. In addition, regional offices will carefully screen requests for any school project requiring regional approval against the asbestos records for the facility as a double-check for potential asbestos impact. If disturbance of known ACM appears likely as the project scope is currently described:

- Look for an alternative approach. For example, if the desired end result is to upgrade flooring which is currently wholly or partially vinyl asbestos tile, can the floor be carpeted over instead of removing the tile?

- If there is no reasonable alternative to disturbing ACM, analyze the project to see if the portion that involves disturbing ACM qualifies as a "small-scale, short-duration project" (see encl 1) for which properly trained and equipped personnel are available, either in-house or contract, through a supporting military office. If not, contact the Asbestos Program Manager. Larger projects must always be coordinated with the Asbestos Program Manager.

5. Periodic Surveillance. ACs must arrange for, or perform, periodic surveillance at least once every six months in each building that contains ACM. (One option is to ask the supporting installation to perform the surveillance as part of the semi-annual inspection required by chapter I, paragraph D.3.j.(2) of reference (c). This option is particularly valid for ACM located in boiler rooms to which ONLY base engineering personnel are allowed access.) The requirements are that:

a. all ACM or assumed ACM identified in the updated management plan be visually inspected to determine if changes in the condition of the ACM have occurred due to any cause, e.g. , water damage, impact, delamination, etc. (The condition of ACM or assumed ACM that is not accessible to visual inspection is assumed to be unchanged barring any evidence to the contrary. For example, the interior lining of a fire door is assumed to be stable unless there is evidence of significant damage to the door which might have impacted the lining.);

b. the date of the surveillance, the name of the individual performing the surveillance, the location and

description of each type of ACM, previous and current conditions, and any changes in condition of the materials be recorded in Table 10.3 of the management plan; and

c. the AC send a copy of the updated Table 10.3 to the cognizant regional office.

6. Warning Labels. The AC shall ensure that warning labels are attached immediately adjacent to any known or assumed ACBM located in routine maintenance areas (such as boiler rooms'). The labels must be prominently displayed in readily visible locations and remain posted until the ACBM that is labeled is removed. The labels shall read, in print which is readily visible because of large size or bright color, as follows: **CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.** (Labels may be available from, and posted by, the supporting installation. If not, ACs should contact the regional office for assistance. Labels should be in English and the host nation language.)

7. Fiber Release Episodes. Reference (c) requires installation commanders to close schools "when facilities deficiencies exist that would endanger the health and safety of students and school personnel." However, when the subject of a known or suspected health threat is an asbestos fiber release episode (i.e., an uncontrolled or unintentional disturbance of ACM resulting in visible emission), DoDDS management personnel must be involved in the decision.

a. Minor Fiber Release Episode. The EPA defines a minor episode as "the falling or dislodging of 3 square or linear feet or less of friable ACBM" and does NOT require closing the building. The following steps ARE required:

(1) On learning that a minor fiber release episode has occurred, the AC must promptly evacuate and secure the immediate area, notify the regional office, issue a priority work request to the supporting installation to clean up the debris and make appropriate repairs (unless the regional office makes other arrangements), and document the occurrence and its resolution in Table 10.7 of the management plan.

(2) In response to the request for clean up and repair, EPA requires that trained personnel:

(a) thoroughly saturate the debris using wet methods,

(b) clean floors and other horizontal surfaces with a HEPA (High Efficiency Particulate Air) vacuum and/or wet cleaning methods,

(c) dispose of all debris, filters, mopheads, and cloths in sealed, leak-tight containers, and

(d) repair the area of damaged ACBM with asbestos-free spackling, plaster, cement, or insulation, or seal with latex paint or an encapsulant, as appropriate.

(3) The regional office will notify the Asbestos Program Manager of the occurrence and will follow up with the installation and the AC to ensure that appropriate actions were taken and the management plan annotated.

(4) The exclusive employee representative should be given notice when the minor fiber release episode is discovered.

b. Major Fiber Release Episode. The EPA defines a major fiber release episode as "the falling or dislodging of more than 3 square or linear feet of friable ACBM" and does NOT normally require closing the building. The following steps ARE required:

(1) The AC, on learning that a major fiber release episode has occurred or is imminent (e.g., asbestos-containing ceiling tiles are so damaged by a water leak that they may fall at any time) must promptly evacuate and secure the immediate area, notify the regional office, document the occurrence in Table 10.7 of the management plan, and (unless the regional office makes other arrangements) request the supporting installation's assistance, as appropriate, to:

(a) restrict access to the area and post signs to prevent entry by persons other than those who will perform appropriate response actions (Access to areas not directly affected by the release should not be restricted.),

(b) shut off or temporarily modify the air handling system, if one exists, to prevent the distribution of fibers to other parts of the building,

(c) decontaminate (through the use of HEPA vacuums and/or wet cleaning methods) any school equipment, books, supplies, furniture, etc. located in the area of an actual fiber release for which the school will have a need before permanent response actions can be completed, and

(d) provide alternate facility space, if required, until response actions are completed.

(2) The regional office will immediately notify the Asbestos Program Manager of the occurrence of, or potential for, a major fiber release episode and serve as a liaison among ODS, the facility affected, and its supporting installation.

(3) Response actions for major fiber release episodes must be designed by persons accredited in accordance with the DoD Contractor Accreditation Plan (encl 2). The Asbestos Program Manager will work with the cognizant regional office to arrange for a correct and timely response. NOTE: The EPA discourages the use of air monitoring as the primary technique for assessing asbestos hazards in schools but recognizes that it may provide useful supplemental information when used in conjunction with a visual inspection. Air monitoring may be helpful in assessing the severity or extent of a major fiber release episode but only if the air samples are properly collected and analyzed. Analysis by phase contrast microscope (PCM) distinguishes fibers from other particles but does not distinguish asbestos fibers from other fibers (e.g., clothing or carpet). Analysis by transmission electron microscope (TEM) is specific to asbestos. Both methods have a role in an overall asbestos management program; however, when air monitoring is to be used as the determining factor in deciding whether to close a school building or a portion of it following a major fiber release episode, only TEM results are to be considered. The regional office will work with the Asbestos Program Manager to arrange for such analysis when it is deemed necessary.

(4) The exclusive employee representative should be given notice when the major fiber release episode is discovered.

#### 8. Special Issues.

a. "Non-DoDDS" Buildings. Because of the way AHERA defines a school building, certain "non-DoDDS" buildings were inspected in the initial survey and/or the triennial reinspection. These included, for example, base gymnasiums and chapels regularly used for school assemblies or" curricular requirements (e.g., physical education classes), and mess halls/kitchens used for the serving or preparation of an official student meal program. These buildings are treated as "normal" DoDDS buildings for purposes of the required asbestos documentation--that is, a school must maintain information in its management plan about ACM in these buildings until it no longer uses them--but the responsibility to initiate and pay for repair, removal, or O&M actions rests with the installation. This is why (in addition to the reason in para C.10.c. , above) supporting installations are furnished a copy of schools' reports and O&M manuals. IT IS IMPORTANT TO NOTE, however, that the recommended response actions given in each school's management plan are consistent with AHERA and with DoDDS' preference to remove friable ACM over the long term. Installations are not bound by AHERA or by DoDDS policy for "their" buildings so an installation may choose, for example, to leave asbestos pipe insulation in place in a mess hall and keep it in good repair without endangering human health.

b. School Automotive Shops. Asbestos brake linings are not covered by AHERA because they are not building materials. Nevertheless, they are included in this manual because they represent a potential source of exposure to asbestos dust in any school with an auto shop in which students perform brake work on automobiles, trucks, or other equipment. (Non-asbestos brakes are standard on new cars and some trucks in the U.S. and some foreign countries but it will be many years before all the old asbestos brakes are replaced. It is the removal or repair of older brakes that represent the greater potential for exposure.) Accordingly, DoDDS auto shops are to follow the guidelines in the EPA leaflet "Controlling Brake Dust to Protect Your Health--What Every Auto Mechanic Should Know," a copy of which is at encl 5.

DEFINITIONS

Abatement	Procedures which are implemented to eliminate the presence of asbestos fibers in air; these are removal, encapsulation, enclosure and repair.
<b>ACBM</b>	Asbestos-containing building material. Includes 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>ACM</b>	Asbestos-containing material. Per EPA rules, any material that contains more than 1.0 percent asbestos by weight. DoDDS also includes materials between 0.1 and 1.0 percent in its program.
<b>AHERA</b>	Asbestos Hazard Emergency Response Act. An act passed by Congress in October 1986 which required the EPA to promulgate regulations requiring inspection for ACBM, development of asbestos management plans, and response actions with respect to ACBM in the nation's schools.
Asbestos	A group of naturally occurring minerals that separate into fibers. There are six asbestos minerals used commercially: chrysotile, amosite, crocidolite, anthophyllite, tremolite, actinolite.
Asbestos Coordinator	The individual at each facility (e.g., school, district office, warehouse, regional office, etc.) who is assigned the responsibilities listed in section D, paragraph 5, of this manual.
Asbestos Management Plan	Required by AHERA, a plan detailing the steps to be taken by a school to control potential asbestos hazards in the school.
Asbestos Management Program	A program instituted by DoDDS to comply with AHERA and to administer long-term control and monitoring of ACM in its schools.
Asbestos Program Manager	The person appointed at the Office of Dependents Schools to direct and monitor the Asbestos Management Program.
Containment System	A separation or barrier system that prevents the movement of asbestos-contaminated air from the abatement work area into uncontaminated areas.
Encapsulation	The treatment of ACM with a penetrating or

surface sealant in order to minimize the potential for asbestos fiber release.

Enclosure The system of containment that creates an airtight seal or barrier between the ACM and the adjacent occupied area.

**EPA** Environmental Protection Agency. The agency required by AHERA to promulgate regulations concerning asbestos in schools.

Friable ACM Any ACM that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure.

HEPA Filter High Efficiency Particulate Air filter. A type of filter which is 99.97 percent efficient at trapping particles of .3 micrometers in diameter.

Homogeneous Sampling Area An area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color or texture, serves the same function, and was installed at the same time.

Periodic Surveillance A visual check of the condition of ACM once every six months.

Removal The stripping of any ACM from surfaces or components of a facility or the removal of structural components.

Response Action A method, including removal, encapsulation, enclosure, repair, or operations and maintenance, that protects human health and the environment from friable ACBM.

Small-Scale Short-Duration Projects Repairs, involving encapsulation, enclosure, or removal, to small amounts of ACM. Normally, this activity is required in the performance of emergency or routine maintenance activity and is not routinely intended solely as asbestos abatement. Such work may not exceed amounts greater than those specified in Appendix D of current addendum (by Baker/TSA) to the Special O&M Manual for specific ACMs. Personnel performing this work must have received a minimum of 16 hours special training in asbestos abatement activities.

Special Operations & Maintenance (O&M) Program A program specifically designed to clean up asbestos fibers previously released, to prevent future release by minimizing ACM disturbance or damage, and to monitor the condition of the ACM.

DoD CONTRACTOR ACCREDITATION PLAN  
FOR  
THE DEPARTMENT OF DEFENSE DEPENDENTS SCHOOLS (DoDDS)  
ASBESTOS MANAGEMENT PROGRAM

Public Law 99-519, Asbestos Hazard Emergency Response Act of 1986 (AHERA), required all elementary and secondary schools, including the overseas DoDDS, to establish asbestos management programs in accordance with Environmental Protection Agency (EPA) regulations and required the EPA to develop a model contractor accreditation plan for persons who inspect for asbestos-containing materials (ACM), prepare management plans, or design or conduct response actions in schools. The law tasked each State and the Secretary of Defense to adopt contractor accreditation plans at least as stringent as the EPA model. Since DoDDS facilities are located in foreign countries where they are subject to host nation laws and regulations, as well as to negotiated agreements or treaties, the DoD plan must be somewhat flexible.

PLAN :

1. Persons who inspect for ACM in DoDDS facilities shall be U.S. contractor or in-house DoD personnel who have been accredited through either an EPA- or State-approved course for building inspectors.

2. Persons who prepare management plans for DoDDS facilities shall be U.S. contractor or in-house DoD personnel who have been accredited under 1, above, and are also accredited through either an EPA- or State-approved course for management planners.

Persons who design response actions for DoDDS facilities (except small scale, short duration projects) shall be:

contractor (U.S. or foreign) or in-house DoD personnel who have been accredited through an EPA- or State-approved course in asbestos abatement design, or

b. foreign contractors who have been accredited, licensed, or approved by the host nation government to do asbestos abatement design when that government's asbestos-related laws, regulations, or standards are deemed comparable to those of the United States by the supporting DoD engineering office. (To be comparable, the following subjects must be covered at a minimum: background on asbestos, potential health effects of exposure, abatement alternatives, fiber aerodynamics and control, safety hazards, personal protective equipment, designing abatement solutions, occupant protection, and replacement materials. )

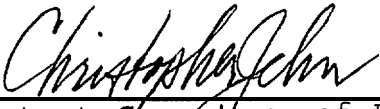


4. Persons who conduct or supervise response actions in DoDDS facilities (except small scale, short duration projects) shall be:

contractor (U.S. or foreign) or in-house DoD personnel who have been accredited under an EPA- or State-approved course for asbestos abatement workers or supervisors, or

b. foreign contractor or in-house DoD personnel who have been trained and tested by personnel accredited through an EPA- or State-approved course for asbestos abatement workers or supervisors, or

c. foreign contractor personnel who have been accredited, licensed, or approved by the host nation government to do abatement work when that government's asbestos-related laws, regulations, or standards are deemed comparable to those of the United States by the supporting DoD engineering office. (To be comparable, the following subjects must be covered at a minimum: background on asbestos, potential health effects of exposure, personal protective equipment, work practices, personal hygiene, other safety hazards, and air monitoring.)

APPROVED:   
Assistant ~~Secretary~~ of Defense  
(Force Management and Personnel)

DATE: 3/30/90

ASBESTOS DOCUMENTS FEATURES SUMMARY

Facilities in use from mid-1987 to mid-1988 were inspected by the Dynamac Corporation of Rockville, Maryland. Each facility was sent a survey report, a management plan and, if Dynamac found ACM in the facility, a special operations and maintenance manual.

**SURVEY REPORT** Explains the purpose of the inspection, identifies buildings inspected and date of inspection. Table 1 lists homogeneous areas of suspect ACM, briefly describes the material and its location, and gives either the lab analysis result or states that the material was assumed to be ACM. Table 2 sums up, by homogeneous sample area within building, only the materials found to contain asbestos and those assumed to contain asbestos. Table 3 lists the inspectors' recommended response actions for the materials listed in Table 2. The report also describes assessment and sampling methods used by the inspectors, contains a glossary of terms and copies of the inspectors' training certificates and signed lab reports, and, at Appendix D, provides line drawings of building(s) surveyed showing about where each sample was collected.

**ASBESTOS  
MANAGEMENT  
PLAN**

Refers to the survey report and repeats certain information, e.g., some tables are repeated but with columns added so that the asbestos coordinator can annotate them when work is undertaken and/or ACM is removed. (Note: The recommended response actions in Table 5.1 are normally the same as those given in Table 3 of the survey report. Occasionally, the management planner who signed the management plan disagreed with the inspectors' recommendation for a particular ACM and changed it in Table 5.1.) Other tables are added for recording names and dates for various activities as they occur in order to keep the records up to date, e.g., annual notifications to parents and staff, periodic surveillance, fiber release episodes, etc.

**SPECIAL O&M  
MANUAL**

Contains information on asbestos characteristics and health effects, the basic elements of an O&M program, equipment and supply requirements, and specific information on the do's and don'ts of maintaining the types of ACM found or assumed to be in the facility. This manual is bilingual for DoDDS facilities in Japan, Okinawa, Panama, Spain, Italy and Germany.

Based on the results of the Dynamac surveys and on plans at the time for major or minor construction and/or renovation projects, pre-abatement design visits were conducted at some DoDDS facilities by Baker/TSA of Pittsburgh, Pennsylvania. For each of these facilities, Baker/TSA issued a Pre-Design Report.

**PRE-DESIGN  
REPORT**

Presents a concept design for a potential abatement project beginning with a report summary, describing steps involved in the pre-design process, listing the recommended abatement areas, and providing a rough cost estimate. Section 2 gives a summary of the history of the building(s) involved (e.g., age and type of construction) and the plans for construction or rehabilitation at the time. Based on this, Baker's team took additional or "destructive" samples of materials likely to be disturbed in any planned projects: these are described and results given in Section 3. Table II in Section 3 lists the positive and assumed ACM identified by both the original Dynamac inspectors and the Baker pre-design team. Section 4 describes Baker's design recommendations by building and abatement area and gives a breakout of the estimated abatement cost. Other sections summarize relevant U.S. regulations and local codes, regulations and procedures. App. C contains building drawings showing the locations of the additional samples collected by Baker.

The most recent series of documents was generated by the first triennial reinspection, as required by AHERA. The reinspection were also performed by Baker/TSA.

**AHERA  
REINSPECTION  
REPORT**

Updates the asbestos record for the facility by confirming that the ACMs identified in the original Survey Report and the Pre-Design Report, if applicable, are either still in place or were previously removed, and, if remaining, identifies the current condition of the materials. (See Sections 2 and 4 of the report for a narrative summary and the detailed findings, respectively.) For the ACMs remaining, recommended response actions are given in Section 5: these may or may not differ from previous recommendations. depending on the condition of the material and on plans for the facility as of the date of the reinspection.

**ADDENDUM TO  
THE ASBESTOS  
MANAGEMENT  
PLAN**

The addendum's format is the same as the original plan. It updates certain sections (e.g., asbestos coordinator, remaining ACM and assumed ACM, recommended response actions, etc.); sections and appendices that have not changed are not repeated. Thus, this document must be used with the original management plan.

**ADDENDUM TO  
THE SPECIAL  
O&M MANUAL**

This addendum's format is also the same as the original special O&M manual. Sections that have not changed are not repeated. Changes were made to Table 5.1 to reflect the remaining known or assumed ACM with the current recommended response actions and to Appendix D to update the O&M procedures for the ACM in the facility.

ANNUAL NOTIFICATION INSTRUCTIONS AND SAMPLES

AHERA requires annual written notification (i) to parent, teacher, and employee organizations of the availability of asbestos management plans for review and (ii) to workers and building occupants, or their legal guardians, of inspections, response actions, and post-response action activities, including periodic reinspection and surveillance activities planned or in progress. The requirements can be met with one notice in the form of a memorandum given to each employee and sent home with students or an item published in the school newsletter. An annual notice is required even if your facility has no ACM. Because some parents and/or employees will be new each year, it is not sufficient to say "Nothing has changed since our last notice" or otherwise assume prior knowledge of the asbestos program. Each year's notice must include the following, as applicable:

- Dates of inspection/reinspection. [See p. 2 of Dynamac's Survey Report and p. 2-1 of Baker/TSA's AHERA Reinspection Report, respectively.]

- Types of all ACM, identified or assumed, that remain in the facility and the general locations. [Refer to table 6.1 in the Asbestos Management Plan or its addendum, whichever is later. ]

- Whether or not any of the ACM is currently recommended for removal. [Refer to table 5.1 in the Asbestos Management Plan or its addendum, whichever is later.]

- Identity and location of ACM for which an abatement project is planned.

- Statement regarding periodic surveillance. [See sample notice.]

- Availability of the management plan for review in the administrative office.

Sample notices follow this page. The bracketed instructions in bold type remind you where to find the information to be included in the notice for your facility; do not put the bracketed words in your notice. There are samples for:

- Facilities originally inspected by Dynamac Corporation (1987-88) and reinspected by Baker/TSA (1990-91).

- Facilities new to DoDDS since SY 1987-88 whose first inspection was performed by Baker/TSA.

- Facilities with no known or assumed ACM.

SAMPLE NOTICE FOR FACILITY FIRST INSPECTED BY DYNAMAC IN 1987-88  
AND REINSPECTED BY BAKER/TSA IN 1990-91

(Letterhead)  
(Date )

MEMORANDUM FOR PARENTS AND STAFF

As required by the Asbestos Hazard Emergency Response 'Act of 1986, our buildings have been inspected for asbestos-containing materials. An original inspection was performed by the Dynamac Corporation on [take date from p. 2 of the 1987 or 1988 Survey Report] and a triennial reinspection was performed by Baker/TSA on [take date from p. 2-1 of the AHERA Reinspection Report] in accordance with Environmental Protection Agency (EPA) regulations and DoDDS policy.

As of the reinspection, we had asbestos present in: [refer to table 6.1 of the Asbestos Management Plan addendum]

- vinyl floor tiles in the administrative offices, teachers' lounge, and first floor classrooms and hallways of Bldg 2001,
- insulation on steam pipes in the boiler room of Bldg 2002,
- cement roof panels on the walkway between Bldgs 2001 and 2002.

The wall plaster in the old wing of Bldg 2002, identified in the original inspection as containing a trace amount of asbestos, was retested in the reinspection by the current state-of-the-art method (electron microscopy) and found NOT to contain asbestos after all.

The cement roof panels were removed during the exterior renovations over the summer recess this year. The steam pipe insulation will be removed during the boiler room renovation, currently planned for summer 1993. The inspectors found the vinyl floor tiles to be in good condition and indicated that there is no reason to remove them at this time.

As required by EPA, a periodic surveillance program is in effect for asbestos materials that remain in place and their condition will be closely monitored.

A Copy of the Asbestos Management Plan is kept in our office and is available for your review. If you have any questions or concerns, please do not hesitate to contact me.

John Smith  
Principal

SAMPLE NOTICE FOR FACILITY FIRST INSPECTED BY BAKER/TSA

(Letterhead)

(Date )

MEMORANDUM FOR PARENTS AND STAFF

As required by the Asbestos Hazard Emergency Response Act of 1986, our buildings have been inspected for asbestos-containing materials. The inspection was performed by Baker/TSA, Inc. on [take date from p. 2-1 of the AHERA Inspection Report] in accordance with Environmental Protection Agency (EPA) regulations and DoDDS policy.

Results of the inspection showed asbestos to be present in:  
[refer to table 6.1 of the Asbestos Management Plan]

- sheet gaskets in the basement mechanical rooms of both buildings 441A and 441B,
- the adhesive under the floor tiles of the media center.

The inspectors found the sheet gaskets and adhesive to be in good condition and indicated that there is no reason to remove them at this time.

As required by EPA, a periodic surveillance program is in effect for asbestos materials that remain in place and their condition will be closely monitored.

A copy of the Asbestos Management Plan is kept in our office and is available for your review. If you have any questions or concerns, please do not hesitate to contact me.

John Smith  
Principal

SAMPLE NOTICE FOR FACILITY WITH NO ACM

(Letterhead)

(Date )

MEMORANDUM FOR PARENTS AND STAFF

As required by the Asbestos Hazard Emergency Response Act of 1986, our buildings have been inspected for asbestos-containing materials. [State here the dates of inspection by Dynamac and of reinspection by Baker/TSA, or of inspection by Baker/TSA, whichever is applicable.] The inspection(s) was(were) conducted in accordance with Environmental Protection Agency regulations and DoDDS policy.

The inspection report shows that no asbestos-containing materials were found in our facility. A copy is kept in our office and is available for your review.

If you have any questions or concerns, please do not hesitate to contact me.

John Smith  
Principal



United States  
Environmental Protection Agency  
Washington DC 20460

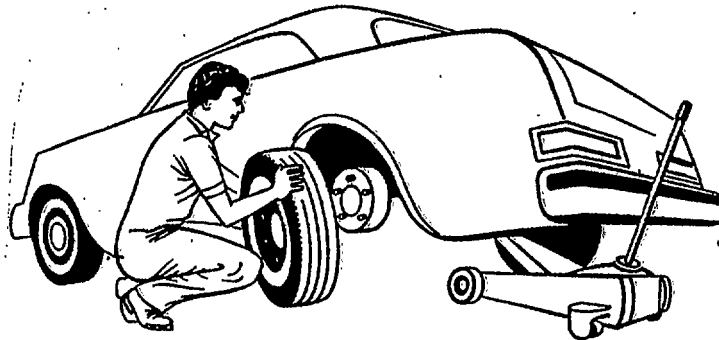
EPA-560-  
OPTS-86-003  
Sept. 1986

Asbestos Action Program



# Controlling Brake Dust to Protect Your Health

## ...What Every Auto Mechanic Should Know



## CONTROLLING BRAKE DUST TO PROTECT, YOUR HEALTH

Mechanics and anyone else in a garage where brake and clutch work are done may be exposed to asbestos dust. Some brake dust can be seen when a brake drum is removed from a car, truck, or other equipment. But there are also many very small dust particles that can't be seen with the naked eye.

These invisible particles may be asbestos or other brake lining materials. Breathing these particles can damage your health. Many years after breathing them, they may cause shortness of breath, lung disease, or cancer.

Asbestos is only one of many materials used in brake linings today. The only way sure way to know what is in the dust from a particular brake is to test it in a laboratory. Since some newer brake lining materials are still being tested, caution is necessary.

***The only practical way to protect your health and those around You is to control the release of brake dust in your garage to the lowest level possible.***

### CLEANING METHODS THAT RELEASE BRAKE DUST INTO THE AIR

Air Hose. DON'T BLOW BRAKE DUST! ! NEVER USE AN AIR HOSE FOR CLEANING. This blows brake dust into the air of your garage, it is one of the worst things you can do, and this is now illegal.

When brakes are cleaned with an air hose, invisible particles of brake dust can stay in the air long after a brake job is done. Any activity in the brake work area can stir up the particles that have settled.

Other Methods that Release Brake Dust into the Air. Also not recommended are cleaning with a dry brush or rag, wet brush or rag, garden hose, liquid squirt bottle, solvent spray, or ordinary shop-vat. These methods will also stir up visible and invisible brake dust. Many

of these dust particles are so small that they can pass through the, filter bag of an ordinary vacuum cleaner and spread throughout a garage.

### CONTROLLING BRAKE DUST

Vacuum/Enclosure Method. A vacuum/enclosure system has a special box, with clear plastic walls or windows, which fits tightly around a brake assembly. Some boxes can even fit over a brake drum. Good brake cleaning can be done without exposing mechanics or contaminating a garage. A special air gun inside the box is used for cleaning. An exhaust hose goes from the box or drum to a special "HEPA"\* asbestos vacuum cleaner, which draws out and stores the brake dust.

The manufacturer's instructions should be carefully followed when using this system and changing the filters or collection bags. Improper changing can release dangerous amounts of asbestos into the air.

Steps for using this type of equipment on drum brakes are simple:

1. Check that the hose is securely fastened, to the HEPA vacuum container and to the brake enclosure. Also check that the vacuum container seals and clips are in proper functioning order according to the manufacturer's instructions.
2. Remove the wheel.
3. Turn on the asbestos vacuum cleaner.
4. Place the enclosure over the drum, being sure it forms a tight seal behind the backing plate.
5. Place hands into the attached rubber gloves, if the enclosure is equipped with them,
6. Remove the brake drum. Some equipment allows use of a hammer or other tools when needed inside the enclosure for drums that are hard to remove,
7. Blow dust off the drum and brake assembly using the air gun attachment inside the enclosure.
8. Clean all the inside surfaces of the enclosure towards the vacuum exit using the air gun attachment inside the enclosure.
9. Remove the enclosure and turn off the vacuum cleaner.

*\*HEPA stands for an extremely fine, high-efficiency particulate aerosol filtration system.*

Wet Methods. Using specially designed low-pressure spray equipment that wets down brake dust and properly catches the run-off may prevent some asbestos from spreading around a garage. Be sure to use only the liquid recommended by the manufacturer.

Waste. All waste that contains brake dust must be carefully disposed of according to Federal and local regulations for asbestos materials.\* Asbestos waste should be placed in a specially marked heavy plastic bag, double tied, and stored in a, leakproof, airtight container designated for asbestos waste.

Machining and Bevelling. Use pre-ground, ready-to-install parts. If a brake lining must be drilled, grooved, cut, bevelled, or lathe-turned, low speeds should always be used to keep down the amount of dust created. All machinery should have an adequate, "HEPA"-equipped local exhaust dust collection system to prevent asbestos exposures and shop contamination.

**BRAKE LININGS SHOULD NEVER BE GROUND** because this makes a lot of dust. Slow lathe-turning will get the same job done with much less dust.

**Special Areas for Brake Work.** Where practical, brake work should be done in a special area set apart from other work areas. No one should eat, drink, or smoke in an area where brake work is done. Smokers who are exposed to asbestos, even while they are not smoking, are at specially high risk of getting lung cancer. If you smoke, you should get help to stop smoking. If possible, work clothes should be laundered at special facilities equipped to wash clothing contaminated with asbestos.

*\*OSHA asbestos waste disposal regulations are covered under 29 CFR 1910(j)(2). Transport and disposal of asbestos waste should be done only by individuals familiar with procedures for handling asbestos waste in accordance with EPA's waste disposal guidance (EPA/530-SW-85-007).*

## DO's

- DO clean brakes and drums with special "HEPA" vacuum cleaners.
- DO use pre-ground, ready-to-install parts when possible.
- DO lathe-turn brake blocks at a low speed with proper "HEPA"-equipped exhaust ventilation.
- DO dispose of asbestos waste according to Federal and local regulations.
- DO wash thoroughly before eating or going home.
- DO change into clean clothes before going home.
- DO stop smoking.

## DON'Ts

DON'T clean with:

- air hose
- dry brush or rag
- wet brush or rag
- " garden hose
- liquid squirt bottle
- solvent spray
- ordinary shop-vat

DON'T grind brake blocks.

DON'T lathe, bevel, drill, or cut brake blocks without proper exhaust ventilation, "

DON'T take work clothing home.

DON'T eat, drink, or smoke in work areas.

## ADDITIONAL INFORMATION

This fact sheet was prepared by the Federal Brake Mechanic Education Program at the U.S. Environmental Protection Agency. Other free materials include a poster and a technical guidance document. A videotape is also available.

For copies of these materials or additional free information on asbestos, call or write to the EPA office in your region or:

U.S. EPA  
TSCA Assistance Office, TS-799  
401 M Street, S.W.  
Washington, D.C. 20460  
(202) 554-1404

Additional occupational information on asbestos is available from:

OSHA Office of Information and  
Consumer Affairs, Room N-3637  
200 Constitution Avenue, N.W.  
Washington, D.C. 20210  
(202) 523.8151

National Institute for  
Occupational Safety and Health  
4676 Columbia Parkway  
Cincinnati, Ohio 45226  
(513) 533-8323