3214.60 HHESS HB 57

SUPERINTENDENT
ADAK REGION SCHOOLS
FPO SEATTLE AK 96791

SUPERINTENDENT
BRISTOL BAY BOROUGH SCH D
NAKNEK AK 99633

SUPERINTENDENT
ALASKA GATEWAY SCH DIST
TOK AK 99780

SUPERINTENDENT
CRAIG CITY SCH DIST
CRAIG AK 99921

SUPERINTENDENT
DELTA GREELY SCH DIST
DELTA JUNCT AK 99737

SUPERINTENDENT
GATEWAY BOROUGH SCH DIST
KETCHIKAN AK 99901

SUPERINTENDENT
ANCHORAGE SCH DIST
ANCHORAGE AK 99502

SUPERINTENDENT
HAINES BOROUGH SCH DIST
HAINES AK 99827

SUPERINTENDENT
HOONAH CITY SCH DIST
HOONAH AK 99829

SUPERINTENDENT
KENAI PENINSULA BOROUGH S
SOLDOTNA AK 99669

SUPERINTENDENT
KING COVE CITY SCH DIST
KING COVE AK 99612

SUPERINTENDENT
LAKE AND PENINSULA SCH DI
NAKNEK AK 99633

SUPERINTENDENT
LOWER KUSKOKWIM SCH DIST
BETHEL AK 99559

SUPERINTENDENT
IDITAROD AREA SCH DIST
MCGRATH AK 99627

SUPERINTENDENT
ANNETTE ISLAND SCH DIST
METLAKATLA AK 99926

SUPERINTENDENT
NORTH STAR BOROUGH SCH DI
FAIRBANKS AK 99701

SUPERINTENDENT
NORTH SLOPE BOROUGH SCH D
BARROW AK 99723

SUPERINTENDENT
PETERSBURG CITY SCH DIST
PETERSBURG AK 99833

SUPERINTENDENT
PRIBILOF ISLAND SCH DIST
ST PAUL AK 99660

SUPERINTENDENT
ALEUTIAN REGION SCH DIST
ANCHORAGE AK 99503

SUPERINTENDENT
BERING STRAIT SCH DIST
NOME AK 99762

SUPERINTENDENT
CORDOVA CITY SCH DIST
CORDOVA AK 99574

SUPERINTENDENT
COPPER RIVER REAA SCH DI
GLENNALLEN AK 99588

SUPERINTENDENT
DILLINGHAM CITY SCH DIST
DILLINGHAM AK 99576

SUPERINTENDENT
GALENA CITY SCH DIST
GALENA AK 99741

SUPERINTENDENT
JUNEAU BOROUGH SCHOOLS
DOUGLAS AK 99824

SUPERINTENDENT
SITKA BOROUGH SCH DIST
SITKA AK 99835

SUPERINTENDENT
HYDABURG CITY SCH DIST
HYDABURG AK 99922

SUPERINTENDENT
KAKE CITY SCH DIST
KAKE AK 99830

SUPERINTENDENT
KLAWOCK CITY SCH DIST
KLAWOCK AK 99925

SUPERINTENDENT
KODIAK ISLAND BOROUGH S
KODIAK AK 99615

SUPERINTENDENT
LOWER YUKON SCH DIST
MT VILLAGE AK 99632

SUPERINTENDENT
MATANUSKA-SUSITNA BOR S
PALMER AK 99645

SUPERINTENDENT
NENANA CITY SCH DIST
NENANA AK 99760

SUPERINTENDENT
NOME CITY SCH DIST
NOME AK 9976

SUPERINTENDENT
NORTHWEST ARCTIC SCH DIST
KOTZEBUE AK 99752

SUPERINTENDENT
PELICAN CITY SCH DIST
PELICAN AK 9983

SUPERINTENDENT
SAINT MARYS CITY SCH DIST
ST MARYS AK 99658

SUPERINTENDENT
SAND POINT SCHOOLS
SAND POINT AK 99661

SUPERINTENDENT
SOUTHWEST REGION SCH DIST
DILLINGHAM AK 99576

SUPERINTENDENT
UNALASKA CITY SCH DIST
UNALASKA AK 99685

SUPERINTENDENT
RAIL BELT SCHOOL DISTRICT
CLEAR AK 99704

SUPERINTENDENT
YUKON FLATS SCH DIST
FORT YUKON AK 99740

SUPERINTENDENT
WRANGELL CITY SCH DIST
WRANGELL AK 99929

SUPERINTENDENT
YAKUTAT CITY SCH DIST
YAKUTAT AK 99689

SUPERINTENDENT
SKAGWAY CITY SCH DIST
SKAGWAY AK 99840

SUPERINTENDENT
SOUTHEAST ISLAND SC
KETCHIKAN AK
99901

SUPERINTENDENT
CHATHAM REGION SCHOOLS
ANGOON AK 99820

SUPERINTENDENT
KUSPUK SCHOOL DIST
ANIAK AK
99557

SUPERINTENDENT
VALDEZ CITY SCH DIST
VALDEZ AK 99686

SUPERINTENDENT
CHUGACH SCH DIST
WHITTIER AK
99503

Private schools for requests

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Office copy

DATE 2 August, 1982

SUBJECT: Identification and Notification requirements for Friable Asbestos Containing Materials in Schools

FROM A. B. Christensen, Asbestos Technical Advisor, Region X

A B Christensen

TO

Each public school district has been mailed a separate package containing copies of "Asbestos-Containing Materials in School Buildings: A Guidance Document", Parts I & II (the orange colored booklets) and a new Regulation dated Thursday May 27, 1982, "Friable Asbestos-Containing Materials in Schools: Identification and Notification" (which requires inspection of all public and private schools for the presence of friable asbestos-containing material).

The responsibility for compiling and maintaining records in each school district (Local Education Agency) is placed on the individual districts. This mailing is designed to assist you to fulfill the requirements. You may find much of the work was already accomplished under the "Voluntary Asbestos Survey Program".

To assure each district and school have in their file the required information, we have made up some "check-off" lists for your use. One blank copy for the district and blank copies for the individual schools in the district are attached. For those districts and schools that are not complicated by the presence of any friable materials it will be a simple matter to fill in the blanks which apply. Those districts and schools which have friable materials are, obviously, required to complete inspections and analysis and to comply with the additional requirements of the rule as outlined on the "check-off" list and spelled out in the regulation. Please retain a copy of the "check-off" list with your file.

The check lists are made out to try to cover every situation so please bear with the seeming duplication on the second page of each list.

Should you require copies of any of the following reference materials:

(1) Guidance Documents, Parts I & II,
(2) Mathematical formula referred to in Part I, Chapter 7, page 14 (The Algorithm),
(3) Polarized Light Microscopy (PLM) laboratory listing,
(4) Any other pertinent information, please call or write direct to:

Environmental Protection Agency
School Asbestos ~~Program M/S~~ 524
1200 ~~Sixth Avenue~~
Seattle, WN 98101 / ~~(206) 442-1255~~ 386-7619

3200 Hospital Dr
Suite 101
Juneau, AK 99801

Your assistance to complete the identification of friable asbestos-containing materials in your school district is appreciated.

EPA Form 1320-6 (Rev. 3-76)

Recordkeeping required by Chapter 1 of Title 40, Code of Federal Regulations, Part 763 - ASBESTOS Subpart F - Friable Asbestos-Containing Materials in Schools; Identification and Notification

Cover Sheet

LOCAL EDUCATION AGENCY
INSPECTION FOR FRIABLE ASBESTOS-CONTAINING MATERIALS

Cover Sheet

Name and Address of the Agency (School District)

Local Education Agencies shall inspect each school building which they lease, own, or otherwise use as a school building, to locate all friable material. Inspection shall consist of looking for and touching all suspect material, including surfaces behind suspended ceilings or other non-permanent structures which may be entered during normal building maintenance or remairs.

Listing of All Schools Under Agency Authority	Inspected for Friable Materials		Contains Friable Materials	
	Yes	No	Yes	No
1.				
2.				
3.				
4.				
5.				
6.				

(Attach additional listing to include all schools in agency)

Record of Friable Materials in schools which were sampled and analyzed

School	Sampled Yes or No / Analyzed Yes or No	Analysis Results	Total Area Analyzed / Friable Material
1.			
2.			
3.			
4.			
5.			
6.			

(Attach additional listing to include all schools in Agency which contain Friable Asbestos-Containing Materials)

For each school which contains friable asbestos-containing materials, the total number of school employees who regularly work in that school

Administrative	Faculty	Custodial

Continued Next Page

Warnings and Notifications

(a) Local Education Agencies shall post in the primary administrative and custodial offices and in the faculty common rooms of each school under their authority a completed copy of the Notice to School Employees unless no friable asbestos-containing material is present in the school. The Notice shall remain posted indefinitely in any school which has friable asbestos-containing material.

Date Posted _____ Copies Attached - Yes_____ No_____

(b) Local Education Agencies shall provide to all persons employed in school buildings under their authority which contain friable asbestos-containing materials a written Notice of the location, by room or building area, of all friable asbestos-containing materials in the school

Date Notice Provided _____ Copies Attached - Yes_____ No_____

(c) "A Guide for Reducing Asbestos Exposure", shall be provided to all custodial or maintenance employees.

Date Guide Provided _____

(d) Local Education Agencies shall provide notice of the results of inspections and analysis in each school in which friable asbestos materials are found to the appropriate parent-teacher association of that school. If there is no parent-teacher association for the school, the Local Education Agency shall notify directly the parents of the pupils.

Date Notice Provided to: PTA_____ Parents _____

(e) Each Local Education Agency shall complete and retain in the administrative office of the Local Education Agency the form "Inspections for Friable Asbestos-Containing Materials".

Copy Completed - Yes_____ No_____

CERTIFICATION:

I hereby certify that this Agency has complied with the EPA Regulation 40 CFR, 763.100 through 763.117, "Asbestos-Containing Materials in Schools; Identification and Notification", and that the information on this form is, to the best of my knowledge, true and complete.

Signature	Typed or Printed Name
Typed or Printed Title	Date

Please send copies of this form completed to:

1) State Department of Education, Pouch F, Juneau, AK 99811, ATTEN: Facilities
2) EPA ~~M/S 524~~ EPA-900
   1200 ~~6th~~ Ave. 3200 Hospital Dr.
   Seattle, WN 98101 Suite 101
   Juneau, AK 99801

Recordkeeping required by Chapter 1 of Title 40, Code of Federal Regulations, Part 763-ASBESTOS Subpart F - Friable Asbestos-Containing Materials in Schools; Identification and Notification

Cover Sheet

INDIVIDUAL SCHOOL INSPECTION FOR FRIABLE ASBESTOS-CONTAINING MATERIALS

Cover Sheet

Name and Address of the School

Local Education Agencies shall inspect each school building which they lease, own, or otherwise use as a school building, to locate all friable material. Inspection shall consist of looking for and touching all suspect material, including surfaces behind suspended ceilings or other non-permanent structures which may be entered during normal building maintenance or repairs.

Listing of All Buildings Used by School	Inspected For Friable Materials	Friable Materials Present/ Not Present
1.		
2.		
3.		
4.		
5.		
6.		

(Attach additional listing to include all buildings - (§763.103 (h))

FOR EACH SCHOOL BUILDING WHICH CONTAINS FRIABLE MATERIALS, THE FOLLOWING INFORMATION MUST BE MAINTAINED IN THAT SCHOOL'S ASBESTOS FILE:

1. A blueprint, diagram, or written description of the building which identifies clearly the location(s) and approximate area(s) in square feet of each sampling area of such material(s), the locations at which samples were taken, and the identification number of each sample, and which shows clearly whether each sampling area of friable material contains asbestos, including an estimate of its percent asbestos content as determined by calculating the average of the percent asbestos content of all samples taken in the area.

2. A copy of all laboratory reports and all correspondence with laboratories concerning the analysis of samples taken.

For each school, copies of the "Guide for Reducing Asbestos Exposure", and one copy of "Asbestos-Containing Materials in School Buildings: A Guidance Document, Parts 1 & 2.

Continued Next Page

Warnings and Notifications

(a) Local Education Agencies shall post in the primary administrative and custodial offices and in the faculty common rooms of each school under their authority a completed copy of the Notice to School Employees unless no friable asbestos-containing material is present in the school. The Notice shall remain posted indefinitely in any school which has friable asbestos-containing material.

Date Posted _____ Copies Attached - Yes _____ No _____

(b) Local Education Agencies shall provide to all persons employed in school buildings under their authority which contain friable asbestos-containing materials a written Notice of the location, by room or building area, of all friable asbestos-containing materials in the school.

Date Notice Provided _____ Copies Attached - Yes _____ No _____

(c) "A Guide for Reducing Asbestos Exposure", shall be provided to all custodial or maintenance employees.

Date "Guide" Provided _____

(d) Local Education Agencies shall provide notice of the results of inspections and analysis in each school in which friable asbestos-containing materials are found to the appropriate parent-teacher association of that school. If there is no parent-teacher association for the school, the Local Education Agency shall notify directly the parents of the pupils.

Date Notice Provided To: PTA _____ Parents _____

CERTIFICATION:

I hereby certify that this school has complied with the EPA Regulation 40 CFR 763.100 through 763.117, "Asbestos-Containing Materials in Schools; Identification and Notification", and that the information on this form is, to the best of my knowledge, true and complete.

Signature	Typed or Printed Name
Typed or Printed Title	Date

[illegible] of the friable-asbestos results of any Alaska school that complies with the present regulation.

3) List of those schools represented at your presentation in Anchorage and Fairbanks.

Thank you for your time and effort.

September 17, 1982

Sincerely,

Chris Christensen, Asbestos Technical Advisor
EPA/Region X
1200 Sixth Avenue
Seattle, Washington 98101

Dear Chris[illegible]
A. Smith

The EPA-AOO, Juneau would like to express their appreciation for your presentation on the May 27, 1982 Regulation on Friable Asbestos-Containing Materials in Schools conducted in Juneau (9/13), Anchorage (9/14), and Fairbanks (9/15) for all Alaska school district representatives. I think this explanation, and clarification of the relatively new rule will help to promote Alaska schools to comply with the regulation.

As we discussed, you are planning to distribute a letter explaining the new friable-asbestos regulation to each Alaska school district and private school. Hopefully, this will clarify the regulation for those school representatives who were unable to attend your presentation and encourage each school to comply with the regulation in a timely manner. If we can be of any assistance to you in notifying Alaska schools of their responsibility in identifying friable-asbestos materials in their schools, please contact us.

In order to complete our records concerning this project would you please send us a copy of the following material:

1) The 1982 cover letter that accompanied the new regulation and Guidance Document distributed to all school districts and private schools.

2) The follow-up letter (yellow) and attachments you will be distributing to school districts and private schools.

3) Copy of the friable-asbestos results of all Alaska schools that complied with the volunteer program.

4) Copy of the friable-asbestos results of any Alaska school that complies with the present regulation.

5) List of those schools represented at your presentation in Anchorage and Fairbanks.

Thank you for your time and effort.

Sincerely,

Kathy Pacera
Environmental Scientist

cc: J. Halterman
A. Smith

ATTENDANCE TO CHRISTENSEN'S PRESENTATION IN Anchorage 9/14/82

Tom Bicak Risk Manager Anchorage School Dist

Bob Thornton MAINT DEPT. ANCHORAGE School Dist.

Bob Ellison MAINT + OPERATIONS DIR. KODIAK SCHOOL DIST

Dan R. Sterk PLANT MANAGER NORTH Slope Borough Sch Dist.

Ludwig C. Osowiecki Deputy Superintendent Kenai Peninsula Boro

James Wm. Elliott DOE (SEA) ANCHORAGE

Patrick A Day Dir. Facilities Valdez City Schools Valdez

James C. Hunsicker Dir operations & Maintenance MAT SU School Dist.

Jan D. Affinito, Asst Contract Administrator, Matanuska-Susitna Borough

Steve Zerkel AK Dept. of Env. Cons. [redacted], AK

437 E St., Suite 200

Anch., AK 99501

Please send 10 copies of material listed on 2 Aug. 82 memorandum. Thank you.

Need copy of model specifications for development of asbestos removal contracts.

ATTN: JAN AFFINITO

MATANUSKA-SUSITNA BOROUGH
P.O. Box B
PALMER, AK
99645

Please send set of specs to Rand PLM Lab
Tom Bibeau Risk Manager
Anchorage School Dist.
Pouch 6-614
Anchorage, AK 99503

Attendance to Christensen's presentation in Fairbanks 9/15/82.

List

+ * Donna Higdon — S.D. Warehouse. 1300 Minnie St FBKS. {P.O Box 1250 FBKS. AK 99707

+ * Michael D. Pinon FAIRBANK NSBSD
Dir. Maint + OPS.

+ Nancy R. Napolilli
Dept. of Environmental Conservation
Pouch 1601
Fairbanks, AK 99707

+ Bid E. IRVIN
ALASKA GATEWAY SCHOOL DISTRICT
PO BOX 226 TOK ALASKA 99780

+ Ray L. Huntley
Delta/Greely School Dist.
PO Box 527 Delta Jct. AK 99737

+ JIM ELLIOTT
DOE 650 W. INTNL AIRPT RD
ANCH 99502

+ HARRY Purdy
[illegible] District

* James Howard
Maint Foreman -
FBKS No. Star Borough School Dist.
PO Box 1250 - 99701

ADEC NEWS

PRESS RELEASE FROM THE PUBLIC INFORMATION OFFICE
ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
JUNEAU, ALASKA 99811 (907) 465-2606

Bill Sheffield, Governor Richard A. Nevé, Commissione
Joe Ferguson, Information Officer

FOR IMMEDIATE RELEASE April 20, 1983

ASBESTOS IN ALASKA

by Jana Baumann, Information Officer
Department of Environmental Conservation

JUNEAU--Twenty years ago the word "asbestos" meant progress, indestructibility; a nearly perfect component for building materials to insulate and to fireproof.

Today the mention of asbestos may bring a grim response and thoughts of cancer and lung diseases. What was once thought of as a miracle material is now known to be extremely harmful, especially when it is dispersed into the air and inhaled.

What is asbestos?

Asbestos is a naturally occurring mineral that can be separated into fibers. It is very lightweight and nearly industructible. Before the early 1970s, asbestos was widely used as a component in thermal, electrical, and acoustical insulation, fireproofing, ceiling tiles, and decoration. These applications were most cost effective in large buildings like schools, factories and office buildings.

What are the harmful effects of asbestos?

The danger to human health from asbestos occurs when minute fibers are breathed and become lodged in the lungs. Asbestos containing materials are often friable which means the fibers can be readily separated from the material in which it is

-MORE-

used and become airborne. Fireproofing or insulation which is damaged and crumbling can release invisible asbestos fibers into the air.

Cancers of the chest and lungs and other organs have been positively associated with asbestos exposure. There is no known "safe" exposure. Even brief contact could result in irreversible damage that may not be detected until many years after exposure.

When the health effects of asbestos exposure were documented, many corrective programs were initiated for workers who handle it and for the public who may be unknowingly exposed at their school or workplace. In Alaska, several state and federal agencies regulate asbestos exposure, handling and disposal. Following is a brief summary of agency responsibilities.

Schools and Public Buildings

The U.S. Environmental Protection Agency regulates inspection of schools for identifying asbestos containing materials. The superintendent of each school district in Alaska has been instructed to inspect all school buildings in the district for friable asbestos by June 23, 1983. Each type of friable material located in the school buildings must be tested for asbestos content. Samples must be tested using Polarized Light Microscopy.

School districts are required to keep a record of all the inspections and results from each school building. If asbestos containing material is found in a school, additional information on the location and quantity of this material must be kept on file at the administrative office of the school and at the school district office. The school district must notify employees and the parent-teacher association about the presence of asbestos containing materials.

Instruction is available on how to inspect public buildings and schools which may contain friable asbestos. Booklets and video tapes may be borrowed from the Alaska Operations Office of the U.S. Environmental Protection Agency in Juneau or from the Alaska State Library.

Asbestos emissions to the air inside the work place

The Alaska Department of Labor, Division of Occupational Safety and Health, regulates exposure of workers to airborne asbestos fibers inside the work place. The regulations also govern asbestos exposure during demolition and renovation work.

The regulations set standards for exposure levels of asbestos fibers in the air, and specify work practices such as ventilation and clothing and engineering controls for most workers in the state. Exposure criteria for federal employees and workers on offshore oil rigs or seafood processors are regulated by the U.S. Department of Labor, Occupational Safety and Health.

Questions regarding asbestos exposure or work practices in the work place should be directed to Alaska Department of Labor, Division of Occupation Safety and Health. Sampling of our materials in the work place is also done by this agency.

Asbestos emissions to the outside air

The U.S. EPA has established standards to limit emissions of asbestos to the outside air. These rules govern manufacturing plants which produce cement, fireproofing materials, insulation, and other materials which include asbestos as a component. The rules also govern materials used in roadway surfacing and emissions from asbestos milling operations. These regulations also limit release of asbestos to the air during renovation and demolition activity and fabricating operations that utilize commercial asbestos.

-MORE-

Asbestos Disposal

The U.S. EPA has regulations which regulate handling and disposal of asbestos. Materials containing friable asbestos must be specially contained and wetted. Landfills or disposal sites must meet certain specifications in order to accept the material. Operators of the disposal site must cover it and post warning signs.

Following is a list of agencies which regulate some aspect of asbestos in Alaska, the situations for which they are responsible, and the person to contact.

ADD 4-4-4-4

Responsible Agency	Asbestos Situation
U.S. Environmental Protection Agency Alaska Operatoins Office 3200 Hospital Drive, Suite 101 Juneau, Alaska 99801 Phone: 586-7619 Contact: Kathy Pazera or Steve Torok	Emission to the outside air Disposal of materials containing friable asbestos Rules for landfill or disposal site handling Exposure in public buildings and schools
U.S. Department of Labor Occupational Safety and Health Administration Federal Building and U.S. Courthouse 701 C Street Box 29 Anchorage, Alaska 99513 Phone: 271-5125 Contact: Leonardo Limitiaco	Federal employees Offshore oil rig or floating seafood processor employees
Alaska Department of Labor Division of Occupational Health and Safety 3301 Eagle Street, Suite 303 Pouch 7-022 Anchorage, Alaska 99510 Phone: 264-2597 Contact: Stan Godsoe	Asbestos in the air at the work place Work practices for handling asbestos

PRIVATE LABORATORIES WHO TEST SAMPLES FOR FRIABLE ASBESTOS

NHS Incorporated
Environmental Health Sciences Lab
805 Goethals Avenue
Richland, Washington 99352
Phone: (509) 376-6980

Chemical & Geological Labs of Alaska
5633 B Street
Anchorage, Alaska 99502
Phone: (509) 562-2343

Microlab Northwest
7609 140th Place, N.E.
Redmond, Washington 98502
Phone: (206) 885-9419

# # #

Alaska Health Project

417 West Eighth Avenue — P.O. Box 10-1037, Anchorage, Alaska 99510 — (907) 276-2864

Excerpted from Asbestos: Its Hazards and How to Fight Them by Molly Coye, Oil,Chemical and Atomic Workers International Union, 1978.

What is Asbestos? Who is Exposed to Asbestos?

Millions of American workers are handling asbestos on their job site, and medical experts estimate that because of this, 400,000 workers will die of cancer during the next half century.

Many workers who handle asbestos do not even know they are exposed because the asbestos is not labeled. Asbestos is a mineral, widely used for its heat and acid resistant properties. When separated from rock, it is fluffy and fibrous, and can be inhaled by workers--and by family members exposed to their clothing. Although asbestos is often bonded or woven for industrial uses, the mats and sheets wear down over time, releasing fibers into the air. Welders, for example, use asbestos "protective" blankets, which protect them from flying sparks, but at the same time surround them with flying asbestos fibers as the blanket is cracked and worn with use. Office workers are exposed because ventilation systems lined with asbestos release fibers into the air system. Pipe fitters are exposed because most piping is protected with asbestos. The list of exposed workers is very long but the largest number of exposed workers include:

Air filtration systems workers
Asbestos cement pipe makers
Asbestos cement sheet makers
Asbestos cement shingle makers
Asbestos shingle and board makers
Asbestos textile makers
Automobile mechanics
Barge builders
Building construction workers
Burial vault builders
Cement insulation makers
Cement insulation workers
Cement makers
Cement pipemakers
Cement workers
Chemical workers
Concrete runway builders
Dam builders
Drain tile makers
Fireproofers
Heat insulation makers
Oil refinery workers
Oil well builders
Paint makers
Pier builders
Pipe and furnace fitters
Post makers
Pump packers
Reservoir builders
Road construction workers
Sidewalk builders
Silo builders
Smokestack builders
Sound insulation makers
Stadium builders
Storage tank builders
Swimming pool builders
Tunnel builders
Vinyl asbestos tile makers
Water pipe makers
Welders

Three-quarters of the asbestos used in the United States each year is used in the construction industry, but as this list shows, many workers who are exposed would not consider themselves part of the construction industry. For example, it has been estimated that 40,000 field insulation workers in the United States are exposed, but that the activities of these workers cause secondary exposures to 3 - 5 million other workers. You may be exposed to asbestos on almost any job, and you should never assume there is not asbestos exposure on your job.

sore when you cut your finger) in the small air tubes and sacs of the lung. As the inflammation heals, it leaves scar tissue, called fibrosis. (Asbestos fibers which work their way into the skin cause a similar process, and the heaped-up fibrosis or scar tissue forms "asbestos corns" or "warts".) In the lung, this fibrosis causes two things:

1) it thickens the lining of the air sacs (alveoli) so that it is hard for oxygen to pass from the air into your bloodstream. Slowly, as the scarring progresses, the worker begins to suffocate - even though he can breathe air in, it doesn't get into his blood.
2) The lack of oxygen and hard breathing puts a strain on the heart, so a worker suffering from asbestos may either die of suffocation or of a weak heart leading to heart failure.

The entire process is the disease called "asbestosis." (Asbestosis is not the same thing as cancer, although both asbestosis and cancer are caused by asbestos exposure.) Once the process of fibrosis or scarring starts in asbestosis, it is irreversible. There is no treatment which can make the lung as healthy as it was before. The fibrosis is progressive, and will continue to develop; if it is already in an advanced stage, it may continue to develop even if you completely remove yourself from further exposure to asbestos. The disease asbestosis is incurable. Once the lungs are scarred, there is no way to get the oxygen across them and into the bloodstream. The only known treatment for asbestosis is to prevent it in the first place.

What Are the First Signs of Asbestosis?

A worker suffering from asbestosis will begin to notice that he is short of breath, having trouble doing what he used to do without breathing hard. He may have a dry cough, and sometimes there is pain in the upper chest or back. As the ability to breathe is limited, his fingers and toes become "clubbed" - rounded, with flattened nails. This is one of the signs of decreased oxygen reaching the blood. Because these are such vague symptoms, it is easy for doctors to blame them on other causes instead of asbestos exposure. The symptoms may go on for a long time, while the disease progresses, without other symptoms or a correct diagnosis.

How Can You Test for Asbestosis?

There are a number of ways of finding out if you have asbestosis, but the only sure way is a combination of these tests, recommended by the government:

1) personal/work history - to determine whether you have been exposed to asbestos and for how long.
2) physical examination - with special attention to the sound of the lungs, to thickening and rounding of the finger tips (called clubbing), and other signs of effects on the lungs and heart.
3) chest x-ray - to look for the thickening and scarring which results from asbestosis, or for early evidence of cancer.
4) pulmonary function tests - to find out how much air your lungs can hold (vital capacity) and how fast you can empty your lungs (FEV: forced expiratory volume in one second). These tests are done by having you breathe into a mouthpiece connected to a machine measuring the volume of air.

Excerpted from Asbestos: Its Hazards and How to Fight Them by Molly Coye, Oil, Chemical and Atomic Workers International Union, 1978.

What is Asbestos? Who is Exposed to Asbestos?

Millions of American workers are handling asbestos on their job site, and medical experts estimate that because of this, 400,000 workers will die of cancer during the next half century.

Many workers who handle asbestos do not even know they are exposed because the asbestos is not labeled. Asbestos is a mineral, widely used for its heat and acid resistant properties. When separated from rock, it is fluffy and fibrous, and can be inhaled by workers--and by family members exposed to their clothing. Although asbestos is often bonded or woven for industrial uses, the mats and sheets wear down over time, releasing fibers into the air. Welders, for example, use asbestos "protective" blankets, which protect them from flying sparks, but at the same time surround them with flying asbestos fibers as the blanket is cracked and worn with use. Office workers are exposed because ventilation systems lined with asbestos release fibers into the air system. Pipe fitters are exposed because most piping is protected with asbestos. The list of exposed workers is very long, but the largest number of exposed workers include:

Air filtration systems workers
Asbestos cement pipe makers
Asbestos cement sheet makers
Asbestos cement shingle makers
Asbestos shingle and board makers
Asbestos textile makers
Automobile mechanics
Barge builders
Building construction workers
Burial vault builders
Cement insulation makers
Cement insulation workers
Cement makers
Cement pipemakers
Cement workers
Chemical workers
Concrete runway builders
Dam builders
Drain tile makers
Fireproofers
Heat insulation makers
Oil refinery workers
Oil well builders
Paint makers
Pier builders
Pipe and furnace fitters
Post makers
Pump packers
Reservoir builders
Road construction workers
Sidewalk builders
Silo builders
Smokestack builders
Sound insulation makers
Stadium builders
Storage tank builders
Swimming pool builders
Tunnel builders
Vinyl asbestos tile makers
Water pipe makers
Welders

Three-quarters of the asbestos used in the United States each year is used in the construction industry, but as this list shows, many workers who are exposed would not consider themselves part of the construction industry. For example, it has been estimated that 40,000 field insulation workers in the United States are exposed, but that the activities of these workers cause secondary exposures to 3 - 5 million other workers. You may be exposed to asbestos on almost any job, and you should never assume there is not asbestos exposure on your job.

How Do I Know if I am Exposed to Asbestos?

You may be able to recognize asbestos-made or asbestos-containing materials in your workplace, or recognize your job on the list in the last question. But you should never assume that you are not exposed to asbestos. To find out what you are working with - whether it is asbestos or some other toxic substance - your local union can use a letter of information like the one included in the back of this packet. This letter asks for important information about exposures in the workplace and about worker health and safety records, under the responsibility of union representatives in collective bargaining. These rights are implicit in the collective bargaining agreement. Further information on how to proceed should be obtained through your International Union.

Are Some Kinds of Asbestos Safe?

No. Every kind of asbestos causes cancer, and every kind of asbestos causes asbestosis.

Asbestos itself is a mineral, divided into five major types:

1-chrysotile (white asbestos) - more than 95% of the asbestos used in the world is chrysotile. It is mined in the U.S. and Canada as well as processed and used industrially.

2-crocidolite (blue asbestos) - approximately 3% of the asbestos used in the world is crocidolite. It is used for ship-building because of its resistance to acids and sea water, and is also mixed with chrysotile to accelerate the production of asbestos pressure pipes and sheeting.

3-amosite - bonds well with plastics and is used for floor tiles, fireproof boards in ships and for spraying insulation.

4-anthrophyllite and 5-tremolite - are talc-like forms, used as industrial talcs and in paper-making.

Most asbestos used is a mix of two or more of these types, usually of chrysotile with either crocidolite or amosite. Ninety-two percent of the asbestos used in the construction industry is bonded - "locked in" to such products as floor tiles, asbestos cements, roofing felts and shingles. The other 8% is friable or in powder form, in insulation materials, asbestos cement powders, and accoustical products. Because fibers are easily released from even the bonded forms, a minor remodeling job may release large amounts of fibers into a home or office.

All of these kinds of asbestos cause asbestosis, and all of them cause cancer. There is no safe kind of asbestos.

Why Does Asbestos Make You Sick? What is Asbestosis?

Asbestos fibers float in the air and you inhale them. When they lodge in the lung, these fibers - even fibers so small that they are invisible - irritate the lung. The irritation sets up a reaction, an inflammation (like a

sore when you cut your finger) in the small air tubes and sacs of the lung. As the inflammation heals, it leaves scar tissue, called fibrosis. (Asbestos fibers which work their way into the skin cause a similar process, and the heaped-up fibrosis or scar tissue forms "asbestos corns" or "warts".) In the lung, this fibrosis causes two things:

1) it thickens the lining of the air sacs (alveoli) so that it is hard for oxygen to pass from the air into your bloodstream. Slowly, as the scarring progresses, the worker begins to suffocate - even though he can breathe air in, it doesn't get into his blood.
2) The lack of oxygen and hard breathing puts a strain on the heart, so a worker suffering from asbestos may either die of suffocation or of a weak heart leading to heart failure.

The entire process is the disease called "asbestosis." (Asbestosis is not the same thing as cancer, although both asbestosis and cancer are caused by asbestos exposure.) Once the process of fibrosis or scarring starts in asbestosis, it is irreversible. There is no treatment which can make the lung as healthy as it was before. The fibrosis is progressive, and will continue to develop; if it is already in an advanced stage, it may continue to develop even if you completely remove yourself from further exposure to asbestos. The disease asbestosis is incurable. Once the lungs are scarred, there is no way to get the oxygen across them and into the bloodstream. The only known treatment for asbestosis is to prevent it in the first place.

What Are the First Signs of Asbestosis?

A worker suffering from asbestosis will begin to notice that he is short of breath, having trouble doing what he used to do without breathing hard. He may have a dry cough, and sometimes there is pain in the upper chest or back. As the ability to breathe is limited, his fingers and toes become "clubbed" - rounded, with flattened nails. This is one of the signs of decreased oxygen reaching the blood. Because these are such vague symptoms, it is easy for doctors to blame them on other causes instead of asbestos exposure. The symptoms may go on for a long time, while the disease progresses, without other symptoms or a correct diagnosis.

How Can You Test for Asbestosis?

There are a number of ways of finding out if you have asbestosis, but the only sure way is a combination of these tests, recommended by the government:

1) personal/work history - to determine whether you have been exposed to asbestos and for how long.
2) physical examination - with special attention to the sound of the lungs, to thickening and rounding of the finger tips (called clubbing), and other signs of effects on the lungs and heart.
3) chest x-ray - to look for the thickening and scarring which results from asbestosis, or for early evidence of cancer.
4) pulmonary function tests - to find out how much air your lungs can hold (vital capacity) and how fast you can empty your lungs (FEV: forced expiratory volume in one second). These tests are done by having you breathe into a mouthpiece connected to a machine measuring the volume of air.

What Kind of Medical Testing Should Asbestos Workers Have?

All asbestos workers exposed to asbestos, must have a regular program of medical testing under the new OSHA Asbestos Standard. This testing is not intended to protect against asbestos exposure in the workplace today, or in the future - that must be done with engineering controls. Medical testing is intended to identify workers who have already developed or are developing asbestos-caused diseases. The required medical surveillance program for all asbestos workers is: 1) personal/work history, 2) physical examination, 3) chest x-rays, and 4) pulmonary function tests (see the last question for an explanation of these). The chest x-rays and pulmonary function tests must be performed at least every year for workers exposed to asbestos. Medical examinations are also required at the time of hiring and of leaving a job. The employer is required to provide all these forms of medical testing, and he must have begun providing them from January 31, 1973 on a yearly basis.

However, the worker is not required to take these tests, and often he or she would be better off refusing company-run tests. For, as things stand now, the law does not provide economic job protection for the worker who is transferred to a safer work area on the basis of medical tests. So, unless your collective bargaining agreement guarantees rate retention, seniority and all future wage increases that would accrue to the position left, you do face the threat of economic discrimination from company medical testing programs.

What Kind of Cancer Does Asbestos Cause?

Asbestos exposure causes an increased death rate from many kinds of cancer, including cancer of the stomach, esophagus (tube to the stomach) and bowel, in addition to two kinds of cancer which are very strongly related to asbestos, lung cancer and mesothelioma.

Lung Cancer caused by asbestos exposure is the same as lung cancer caused by smoking. It is hard to diagnose early, it often spreads rapidly and can rarely be cured. Most people who are found to have lung cancer live only six to nine months after it is discovered.

Mesothelioma is an extremely rare kind of cancer, almost always caused by exposure to asbestos. The exposure to asbestos can be very small; in some cases, a family member has been exposed for only a month or two, and then twenty years later develops mesothelioma. Mesothelioma is a cancer of the lining of the lung (the pleural membrane) and of the lining of the abdomen (the peritonealarea). This cancer is incurable; it kills you within 6 months to 2 years, and there is no treatment - drugs, x-rays or surgery - which can help you.

Gastrointestinal Cancer is a general term for several different kinds of cancer of the digestive system. It includes cancers of the esophagus, stomach, colon (large bowel) and rectum. Surgery has been successful in removing tumors and preventing recurrences in some bowel and rectal cancers, but cancer of the esophagus and stomach is rarely detected in time for such success.

What Are My Chances of Getting Cancer If I Work with Asbestos?

If you work with asbestos, your chance of getting cancer is three times higher than the chance for someone not working with asbestos. As you saw on

page 7 of the slide show script, forty-five percent of all asbestos workers will die from some form of cancer. The death rates vary for each particular kind of cancer. For lung cancer the average survival time after diagnosis is 6 to 9 months. Only one in five people with lung cancer will live more than a year. Cancer of the stomach, colon and rectum is three times as common a cause of death for asbestos workers as for other people. Mesothelioma is an extremely rare kind of cancer, so rare that cases of this kind can almost always be traced back to some sort of asbestos exposure; yet, in some studies of asbestos workers, more than 10% of the deaths are due to mesothelioma.

Why Do Only Some People Exposed to Asbestos Get Cancer?

No one really knows how certain toxic substances, like asbestos, cause cancer - and because of this, we don't know why one worker exposed to asbestos may get cancer while the worker next to him does not. Two factors are known to increase the risk of developing cancer from asbestos: length of exposure, and smoking. But anyone exposed to asbestos may get cancer--there is no way to play it safe.

Can I Get Asbestos-Caused Cancer Even if I Don't Smoke?

Asbestos causes cancer in workers, whether or not they smoke. But the chance of getting one kind of cancer - lung cancer - from asbestos exposure is increased up to 7 times if the worker also smokes. This "cooperation" between asbestos and cigarette smoke in causing lung cancer is called "synergism." It is clear, however, that while smoking further increases your risk of cancer, asbestos exposure alone can cause lung cancer, mesothelioma and many other kinds of cancer. Smoking is not known to play a role in any kind of cancer caused by asbestos except lung cancer. Why smoking does increase your risk of asbestos-induced lung cancer is not known. But remember, you can get cancer from asbestos even if you don't smoke.

What If I Only Work with Asbestos for a Short Time?

Even is you are only exposed to asbestos for a very short time, you are still in danger. One study showed that just one month of working with asbestos can double your chances of getting cancer. Another study reported x-ray findings of asbestosis among workers who were exposed to asbestos for only one day. There is no safe amount of exposure or safe amount of time for work with asbestos.

How Long Does it Take to Get Sick from Asbestos Exposure?

Asbestosis - scarring of the lungs - develops more rapidly in workplaces with higher concentrations of asbestos in the air. With moderately heavy exposures, asbestosis may develop within 10 - 15 years; by the time a group of workers have been exposed for 20 years, as many as 40% of them may have

asbestosis. Cancer usually takes at least 20 years, and sometimes as long as 25 to 30 years, to develop from asbestos exposure. The exposure to asbestos must be over a long time period to produce asbestosis or lung cancer, but may be very short in the case of mesothelioma, as short as one or two months.

Can I Get Cancer If I Don't Have Asbestosis?

Yes. Studies have found asbestos-induced cancers among asbestos workers and people living near asbestos mines and plants who did not have asbestosis. Because mesotheliomas can be caused by as little as a month's exposure, mesotheliomas are frequently found in workers who were not exposed long enough to develop asbestosis.

How Can You Test for Cancer Caused by Asbestos? Is there Any Cure?

Unfortunately most of the cancers caused by asbestos are difficult to diagnose early, before they have become untreatable. Most of the cases are found because a worker complains of weakness, loss of weight, or pain; an x-ray is taken which indicates that there is a tumor. In some cases an operation will remove enough of the tumor to allow the patient to live a little longer, but these cancers are almost never curable. This is why it is so important to protect against asbestos exposure in the first place.

Is My Family in Danger if I Work with Asbestos?

Yes. As the slide show script described family exposure on page 8, if you are bringing asbestos fibers home with you - on your clothes, in your hair, in your lunchbox - this endangers your family. In one study 1/3 of the asbestos workers' family members had abnormal chest x-rays from scarring and thickening of the chest lining (pleural membrane) 30 years after their exposure at home. Cases of mesothelioma are known to have happened after as little as 1 month's contact with a family member carrying asbestos fibers home with him. Your family is also in danger of asbestos-caused diseases if the mine or plant where you work is discharging asbestos fibers into the air of your community. Increased rates of asbestosis, lung cancer and mesothelioma have all been found in people living near mines and plants.

Is Asbestos a Danger to the Community?

The air of most cities now contains significant levels of asbestos, as a result of brake linings, construction sites and other urban uses. Concentrations high enough to threaten the health of the community are frequently found near asbestos mines and quarries - the air of Washington, D.C. was found to have dangerously high ashestos levels in 1976 because of a quarry located in Maryland. In addition to general air levels, members of the community may be endangered by asbestos used in construction sites or even brought home on a neighbor's work clothes and washed at the same laundromat.

How Long Have the Dangers of Asbestos Been Known?

Asbestos has been used in modern industry since about 1880. The first medical diagnosis of death from asbestosis was made in England only 20 years later, in 1900. The link between asbestos exposure and asbestosis, or lung scarring, was firmly established by 1930, and repeatedly confirmed in many studies after that. As early as 1918, American and Canadian insurance companies were no longer insuring asbestos workers because of the assumed health hazards of that industry. In 1935, researchers in both the United States and England reported a suspected association between asbestos exposure and lung cancer. By 1955, this association had been confirmed and the link to several other types of cancer had been made as well. The most important and valuabl research in the United States has been done in the last two decades by Dr. Irving Selikoff and his team of investigators at Mt. Sinai Hospital in New York City. They determined the increased cancer rates for different kinds of cancer among asbestos workers, the amount of time which usually passes after exposure until the development of cancer, and the increased risk associated with longer or more intense exposure to asbestos. A copy of Dr. Selikoff's paper on cancer risk among insulation workers, presented at the Conference on Asbestos Disease, Rouen, France in 1975, is enclosed in this packet.

Why Wasn't I Told About the Danger from Asbestos Before?

Even though the dangers of asbestosis and cancer from working with asbestos have been known for more than fifty years, the asbestos industry refused to admit that there was a problem. For years they have attempted to obfuscate and confuse the issues, and the fact that there still is not enough research being done on asbestos-caused diseases has helped industry stall action on this dangerous cause of death and disease among workers. Although there is no longer any question about the fact that asbestos causes asbestosis and cancer, industry is continuing to fight enforcement of the legal standards.

Why is Asbestos Still Used if It is So Dangerous?

Most of the uses of asbestos depend on its heat and acid-resistant properties. For many purposes there is not yet a satisfactory substitute, and substitutes now being used, such as fiberglass, often present their own health and safety hazards. In addition, the asbestos-producing and processing industries are very strong; world-wide production of asbestos increased by 50% in the ten years from 1964 to 1974.

Is Fiberglass a Safe Substitute for Asbestos?

Fiberglass is not "safe." At present there is not enough research to clearly define the extent of the health hazard represented by exposure to

fiberglass. Fiberglass does cause both skin and eye irritation - in some cases severe. Animal experiments have suggested that fiberglass fibers - which closely resemble asbestos fibers - may cause the same fibrotic reaction in the lining of the lung (pleura) as asbestos fibers do, and that such fibers are tumorogenic (tumor-causing). Despite the lack of conclusive evidence, a symposium of experts in 1974 concluded that exposure to fiberglass should be carefully controlled. Again workers are going to bear the burden of proving the harmful effects of a toxic substance - fiberglass - and end up being the guinea pigs for industry as they were for asbestos.

Why Is Working with Talc Dangerous?

Talc itself causes pneumoconiosis, very much like asbestosis. In addition, almost all talc contains asbestos fibers, usually tremolite or anthophyllite. There is only one talc mine in the United States in which the talc is not contaminated with asbestos.

What about Public Employees?

Public employees are not covered by the OSHA Asbestos Standard; in effect, they do not have any protection other than that which they can win in bargaining agreements.

What about Workman's Compensation?

Workman's compensation provisions for asbestos-caused disease vary from state to state. You should take the appropriate steps to obtain workman's compensation in consultation with your local and international union.

How Is Asbestos Measured in the Atmosphere?

Slide 28 showed asbestos fibers photographed through a microscope. The method used to measure asbestos in the air is a membrane filter to trap the fibers and a light microscope to count them. The sampling machine should be put near the nose and mouth of a worker in the exposed area (pinned to his collar, for example) to collect samples representative of the air he is breathing. After being counted, the total fibers collected are averaged out over the amount of air measured. This gives an average number of fibers for a volume of air. The OSHA Asbestos Standard limits the concentration of fibers longer than 5 micrometers to 2 fibers per cubic centimeter. This is the average concentration that cannot be exceeded for an eight-hour day. It is supposed to be a level that you can be exposed to for eight hours every working day without developing disease. This is not the case. Because you breathe in 4 to 8 million cubic centimeters of air during an eight hour day, under the standard, you could inhale 8 to 16 million fibers in a single work day. If enforced, the current standard will significantly improve many workplaces, but there is

considerable medical evidence that this standard will not eliminate lung scarring and cancer. In fact, the only exposure that doctors are certain is totally safe, is no exposure at all.

If My Employer Provides Me with a Respirator, Is That Enough Protection?

No. Under the OSHA Asbestos Standard, employers are required to use engineering controls instead of relying on personal protective equipment. Engineering controls are ways of designing the workplace and work process so that the toxic substance - in this case, asbestos - is separated from the worker or removed mechanically with ventilating and other kinds of housekeeping equipment. Examples of engineering controls for asbestos would include exhaust fans, non-spray application methods for insulating, and storing and disposing of asbestos in sealed containers. All employers should provide full body protective work clothing and hat, maintenance and laundering of the soiled protective clothing (vacuumed before removal), and separate lockers for work and street clothes. Respirators should be used only under these conditions: 1) during the period while engineering controls are being constructed; 2) when exposure is infrequent and for short time periods; or when 3) a work environment cannot meet the legal standard and has been granted a variance.

Is There Any Legal Protection Against Asbestos Exposure on the Job?

Yes. In 1970, workers and their representatives won an important legal tool to help them in their fight for a safe and healthy workplace. Congress passed the Occupational Safety and Health Act and established OSHA, the Occupational Safety and Health Administration, to regulate the use of toxic substances in the workplace. One of these toxic substances is asbestos, and OSHA has set a standard with specific rules and regulations that must be followed wherever fibrous asbestos is present. Failure to follow them is a violation of the law. You should be familiar with these regulations so that you can recognize violations on your job and use the law to protect yourself. A copy of the asbestos standard is enclosed in this packet. The standard provides that:

ENGINEERING	Engineering methods such as isolation, enclosure, exhaust ventilation, and dust collection shall be the prime means of control.
TOOLS	Hand-operated and power-operated tools must have built-in controls.
HANDLING	As far as practicable, asbestos shall be handled wet.
SHIPPING	No asbestos products can be removed from shipping containers without being wetted, enclosed, or ventilated.

HOUSEKEEPING	All external surfaces must be kept free of accumulations of asbestos fibers.
RESPIRATORS	Restrictions are imposed on the use of respirators. No employee may be assigned to a task requiring a respirator if the physician determines that the employee will be unable to function normally when wearing a respirator or that the safety or health of the employee or his fellow employees will be impaired by his use of a respirator. Where respirators are used, the standard recommends "rotation of personnel."
CLOTHING	The employer must provide special clothing, change rooms, clothes lockers and laundering.
MONITORING	Monitoring means measuring the amount of asbestos fibers in the air. This is done with a dust sampler. Every employer using asbestos shall have initially monitored the exposure of his employees by December 7, 1972. Therefore, your workplace should have been monitored at least once. If the exposure is found to exceed the standard, the employer must then monitor at least once every six months.
ACCESS TO MONITORING DATA	Affected employees, or their representative, shall be given a reasonable opportunity to observe any monitoring required . . . and shall have access to the records thereof. <u>This point is important</u>. <u>Have you been given this opportunity</u>? If an employee is exposed to excessive concentrations, he must be told what corrective actions are being taken.
SIGNS	Caution signs must be posted in plants and labels attached to asbestos materials.
MEDICAL EXAMINATIONS	Physical examinations including a 14"x17" Chest X-Ray, pulmonary function tests, and a history, shall be given at preplacement, then each year, and at termination. These examinations shall be provided by the employer, and the physician who conducts the examination <u>must report</u> the results to the employer. Employees have access to this medical data only through their personal physician. (To obtain your medical, you can write the OCAW Citizenship-Legislative Office and we will arrange for a union physician to obtain your record and give it to you.)

TABLE I

Estimates of Lifetime Asbestosis Incidence Per 10,000 Asbestos Workers at Different Exposure Levels

Levels	
Asbestos Fiber Concentration Per Cubic Centimeter	Number of Asbestos Workers (per 10,000) Estimated To Get Asbestosis*
0.5	124
5.0	1,243

*Based on a study by Finkelstein of 201 workers at an asbestos-cement factory in Ontario. Adopted from: BNA Reporter, 11/10/83.

TABLE II

Lung Cancer Deaths Per 10,000 Asbestos Workers (and other workers) Over a 20 Year Period, by Occupational Exposure and Smoking History*

		History of Smoking	
		Yes	No
History of Asbestos Exposure	Yes	120	12
	No	25	2

*Study by Hammond et.al. Based on 8220 workers with 20 or more years exposure to asbestos. Adopted from BNA Weekly Reporter 11/10/83.

TABLE III

Estimated Asbestos Related Cancer Mortality Per 10,000 Asbestos Workers With 20 Years Exposure At Varying Levels of Exposure

Asbestos Fiber Concentration per Cubic Centimeter	CANCER			
	Lung	Mesothelioma	Gastrointestinal	Total
0.1	1	1	0	2
0.5	7	4	1	12
5.0	65	33	7	105

*Adopted from BNA Reporter 11/10/83.

ASBESTOS: What Is It and

How Does It Affect Me?

Historically, asbestos remained a curiosity for centuries, with negligible production until the beginning of the 20th century when it was used as thermal insulation for steam engines. Worldwide production of the mineral now approaches 5 million tons annually, with chrysotile the principal fiber type. Annual United States consumption is approximately 900,000 tons, with more than 70 percent used in the construction industry.

It has been estimated that a majority (85 to 92 percent) of end-product uses have effectively immobilized the asbestos fibers by mixing them into a strong binding material; e.g., cement. Fibers are still liberated, however, during fabricating operations such as grinding, milling or cutting. The remaining 8 to 15 percent is in a form that will more readily permit fiber dissemination, such as friable insulation material or bagged fibers for mixing.

WHERE CAN ASBESTOS BE FOUND?

Of the many uses of asbestos, the technique of spraying fibers onto structural surfaces has been perhaps the most significant in causing asbestos exposure to construction workers during application and to the general population thereafter. Such material, in loosely bonded friable form, has been applied extensively to steelwork to retard structural collapse during fire, and to overhead surfaces for purposes of acoustic and thermal insulation, decoration, and condensation control.

Spray application of asbestos fireproofing and insulating material began in England in 1932. Spray application offered the advantage of rapidly covering large or irregular surfaces evenly and efficiently without the use of mechanical support or extensive surface preparation. Early spray applications in the U.S. were mainly for decorative use and acoustical insulation in ceiling material in clubs and restaurants. In 1950 more than half of all multistory buildings constructed in the U.S. used some form of sprayed mineral fiber fireproofing. In

1968 fireproofing alone accounted for 40,000 tons of sprayed material.

The health hazards of spray application of asbestos to spray operators, other construction workers, and the general public in the vicinity of such operations were recognized and documented. Because of these hazards, the New York City Council banned spray application in 1972. Other cities and states followed suit, and in 1973 the U.S. Environmental Protection Agency (EPA) banned spray application of insulating or fireproofing material containing more than 1 percent asbestos by weight. Decorative materials were not included in the ban, and this omission permitted some continuing application. One example involved all overhead surfaces in the large (1200 unit) condominium complex using a friable mixture of 30 percent asbestos.

On March 2, 1977, EPA proposed an amendment to the national emission standard for asbestos. These amendments would extend the spraying.

Although the spraying of friable asbestos-containing materials in construction has all but ceased, sprayed material within existing structures remains a potential widespread source of asbestos fiber exposure. Although exact figures are not available, if it is assumed that spray application was a common practice from 1958 to 1973, and that fireproofing was the major use of this material, a conservative order-of-magnitude estimate of the total amount of asbestos sprayed over this period would be 500,000 tons. It is indeed possible, therefore that sprayed asbestos material within buildings may become the most significant source of environmental asbestos contamination in the future.

Most of the hot water and steam pipes insulated between 1940 and 1979 have some form of asbestos. Nearly 100 percent of all of the cementious pipe wraps had 10-40 percent amosite. Much of the canvas wrapped glass fiber pipe wraps have between 6-16 percent chrysotile. The cardboard pipe wrap sold under the trade name Aircell has between 6-40 percent chrysotile. Be sure to take precautions before removing any old pipe wrap.

A. Uses of Asbestos

1. Special Textiles
2. Fireproof Textiles
3. Woven Fabrics
4. Acid Resistant Materials
5. Packings
6. Brake and Clutch Linings
7. Electrical and Thermal Insulation
8. Asbestos Cement Pipes and Sheets
9. Gaskets
10. Paper Products
11. Rings
12. Welding Rod Coatings
13. Sound Insulation

B. Sources
Home

1. Roofing
2. Siding
3. Insulation Board
4. Sewage
5. Gas
6. Table and Ironing Board Pads
7. Water Supply
8. Ovens
9. Floor Tiles
10. Floor Tiles
11. Draperies
12. Rugs
13. Electrical Equipment
14. Acoustical Ceiling
15. Talc (Impurity)
16. Covering on Heating Ducts
17. Taping Compound
18. Dry Wall

Sources
Automobile

1. Spark Plugs
2. Brake Lining
3. Clutch Facings
4. Mufflers
5. Filler in Undercoating

"Asbestos," comes from the Greek word meaning inextinguishable or unquenchable, and is the generic term applied to a wide variety of mineral silicates which, when processed, separate into fibers. These fibers, when inhaled or swallowed, may be retained in the lungs, stomach or other parts of the body. They are virtually indestructable and will be found in body tissue for life, even though exposure ceased many years before.

TYPES OF ASBESTOS

I. INTRODUCTION

A. Naturally Occurring Fibrous Materials

Type	Source	Production
Chrysotile ($H_4Mg_3Si_2O_9$)	Canada, Rhodesia	93%
Crocidolite ($Na_6Fe_{10}Si_{16}O_{45}(OH)_2$)	South Africa	3.5%
Amosite ($(Fe\ Mg_7)Si_8O_{22}(OH)_2$)	South Africa	3.5%
Anthophyllite ($Mg_7Si_2O_{22}(OH)_2$)	Finland, U.S.A	0.5%

B. Chemical Composition

1. Major Constituents
   a. Aluminum
   b. Iron
   c. Magnesium
   d. Sodium
   e. Sodium as Na_2O
   f. Oxygen
   g. Silicon as SiO_2
   h. Free SiO_2

2. Minor Constituents
   a. Cobolt
   b. Chromium
   c. Manganese
   d. Nickel
   e. Antimony
   f. Scandium

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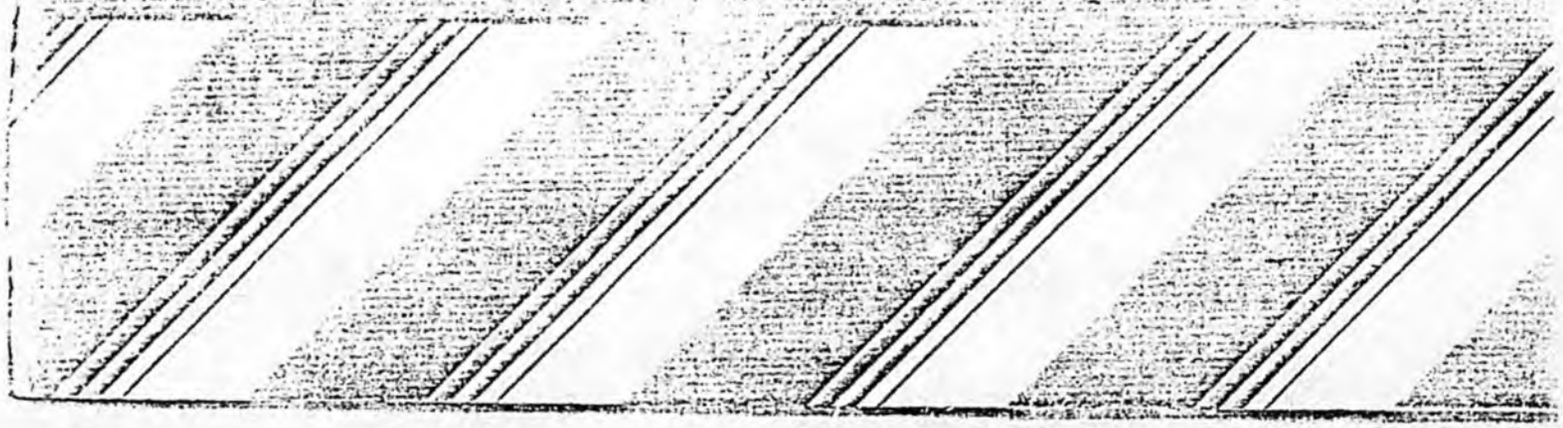
Toxic Substances

EPA

Asbestos-Containing Materials in School Buildings:

Part 1

A Guidance Document



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We are particularly grateful for the assistance and cooperation of DHEW's National Institute of Environmental Health Sciences (NIEHS) and the National Institute for Occupational Safety and Health. We appreciate the review and comments from the members of NIEHS's Subcommittee to Coordinate Asbestos Research of the Committee to Coordinate Toxicology and Related Programs.

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Preface

Recently there has been an increasing awareness of the significance of environmental factors in causing illness. The fibrous minerals known as asbestos, used in many different kinds of products and applications, have entered the environment in both occupational and non-occupational settings. The lung disease, asbestosis, and some cancers of the lung, abdomen, and other parts of the body have been clearly related to asbestos exposure.

The Environmental Protection Agency (EPA) is concerned with the disease-causing potential of intermittent, low-level exposures that can occur in some school buildings from certain asbestos-containing materials. EPA has established a guidance program to inform States and local school officials of the possible health hazards associated with asbestos. EPA will provide guidance to schools which undertake programs to identify and control exposure to these asbestos-containing materials. Although the EPA program is specifically directed to schools, information and assistance will also be available to contractors, workers, and any individuals who are concerned about exposure to asbestos in buildings.

EPA's guidance package contains two parts. This manual, which is Part 1 of the package, is written for school officials. Part 1 outlines steps that schools can take to conduct an asbestos control program. Part 2 contains more detailed information on asbestos identification and control methods. Part 2 will be particularly useful to school personnel, contractors, and others involved in actual asbestos inspection and control activities.

As the lead Agency for the school asbestos program, EPA will provide additional information and assistance to the States and school districts through the Agency's ten Regional Offices located throughout the country. Each Regional Office will have a Regional Asbestos Coordinator who will work with the States to assist in undertaking asbestos control programs.

Other Federal Agencies concerned with the asbestos problem will also participate in the program. The Occupational Safety and Health Administration (OSHA) and the Department of Health, Education, and Welfare through the National Institute for Occupational Safety and Health (NIOSH) and the Public Health Service will provide assistance particularly in the areas of occupational safety and health. This assistance will be made available through these Agencies' Regional Offices.

Questions about the information in these manuals or about the EPA school asbestos program should be referred to the EPA Regional Asbestos Coordinators listed on page 33.

Chapter 1: Introduction: The Concern

Exposure to asbestos was initially associated with a chronic and debilitating lung disease called asbestosis. More recently exposure to asbestos has been associated with lung cancer, a rare cancer of the chest and abdominal lining called mesothelioma, and cancers of the esophagus, stomach, colon, and other organs. Asbestos also acts as a potent cancer-causing agent in combination with cigarette smoking. In all asbestos-related diseases there is a latency or induction period of many years between initial exposure and appearance of the disease.

In most cases asbestosis has followed long exposure to high levels of asbestos fibers. Therefore, asbestosis is not as significant a concern in schools as cancer risk. The potential for increasing cancer risk may exist at much lower and shorter exposures than those for asbestosis.

Under certain conditions, exposure to fibers released from asbestos-containing materials in buildings can reach levels considered potentially hazardous. Some asbestos levels measured in school buildings have even been shown to briefly exceed the current Federal workplace exposure level standards.

Why is there so much concern now?

EPA is concerned in view of the increasing knowledge of the potential of asbestos as a cancer-inducing agent at low-level exposures and the asbestos contamination that has been found in some schools. Another very important concern is that cigarette smoking can enhance the disease potential of asbestos exposure.

Is there a safe level of exposure?

EPA and the scientific community believe that any exposure to asbestos involves some health risk. No safe level of exposure (or threshold exposure level) has been established. Further, it is impossible at this time to confidently estimate the exact degree of risk associated with low-level exposures.

What is considered the best or safest approach to asbestos exposure?

Where possible all exposure to asbestos should be eliminated or controlled.

Are there special concerns about asbestos in schools?

The school children population differs from other non-occupational populations in age, population density, and behavior.

The exposure of children and adolescents to asbestos in the school building occurs early in their life span. Their remaining life expectancy provides a long development period for asbestos-related diseases.

A large number of students can be exposed at one time to asbestos that is released from asbestos-containing materials present in the school building. The duration of exposure is of concern since school children attend school daily for most of the year.

The school population is very active. Certain asbestos-containing materials can be damaged during school activities and as a result of the capricious behavior of students. When the material is damaged, asbestos fibers are released and exposure can occur. Many cases of badly damaged asbestos-containing materials have been found in schools.

Are there any Federal laws or regulations that protect school children from asbestos exposure in school buildings?

There are currently no Federal laws or regulations that protect children in school buildings where asbestos-containing materials are already present.

Is a medical examination necessary for persons exposed to asbestos in school buildings?

Medical examinations are not recommended in school exposure situations. It is difficult to detect asbestos-related diseases in children due to the long induction period before the disease appears. Individuals who have been exposed to asbestos should avoid smoking; and, of course, medical advice should be obtained for any specific concerns or symptoms.

Chapter 2: Asbestos and Its Uses

What is asbestos?

Asbestos is a term for a group of naturally occurring minerals that separate into fibers. The mineral rock is mined and then milled for commercial use. Asbestos fibers are incombustible and have good thermal and electrical insulating properties. There are six asbestos minerals that are used commercially:

Chrysotile
Amosite (Cummingtonite-grunerite asbestos)
Crocidolite
Anthophyllite asbestos
Tremolite asbestos
Actinolite asbestos

Chrysotile and amosite are the most frequently found asbestos minerals in the asbestos-containing materials used in school buildings.

Why is asbestos a unique environmental contaminant?

The durability of asbestos fibers and their small size and fibrous shape make asbestos an unusual environmental contaminant.

Asbestos fibers cannot be easily destroyed or degraded. The size and shape of these fibers permit them to remain airborne for long periods of time. Asbestos fibers that are released from asbestos-containing materials enter the air and contaminate the building environment.

When the fibers have entered the air, individuals in the building can be exposed and inhale the fibers. Although most fibers will not remain in the lungs, those that are retained will stay indefinitely.

What are some uses of asbestos in school buildings?

Most asbestos products are used in building construction and many products containing asbestos are found in buildings. Asbestos has been used in cement products, plaster, fireproof textiles, vinyl floor tiles, thermal and acoustical insulation, and sprayed materials.

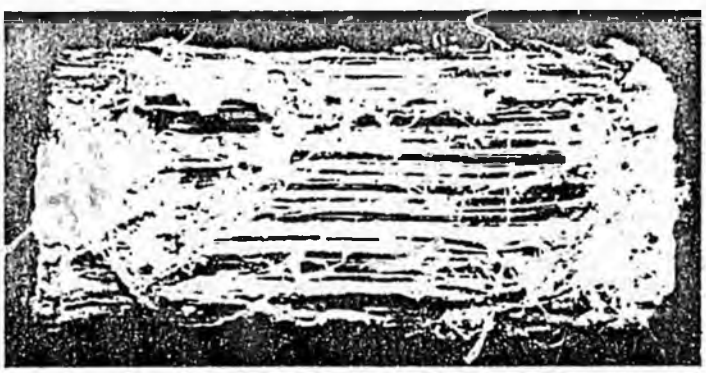
Asbestos also is used in automotive brake linings. In schools that have shops for automotive training, asbestos contamination can occur as a result of automotive brake servicing.

For more information on the uses of asbestos, see pages I–1–1 and I–1–3 of Part 2.

What asbestos-containing materials in school buildings can create an exposure problem?

Only certain kinds of asbestos-containing materials in school buildings are considered hazardous. The potential for release, contamination, and exposure depends on the condition of the asbestos-containing material (such as deterioration from age) and the probability that the material will be damaged.

Hard asbestos-containing materials such as vinyl floor tile do not generally create exposure problems. Asbestos fibers are firmly bound or encased in the material. Sanding, grinding, or cutting will cause



Raw Chrysotile Showing Fiber Structure

Sample of Friable Material

asbestos fibers to be released. Therefore, these hard materials should not be considered hazardous unless they are machined.

Soft or loosely bound (i.e., friable) asbestos-containing materials can release asbestos fibers following only minor disturbance of the material. It is these soft asbestos-containing materials that can cause contamination and exposure problems.

What is friable material?

Friable material is material that can be crumbled, pulverized, or reduced to powder in the hand. Friable material may be an asbestos-containing material or it may be a material that contains other fibers such as cellulose and glass fibers.

This manual is primarily concerned with identifying friable asbestos-containing materials in school buildings and recommending steps to reduce the exposure that they may cause.

What are friable asbestos-containing materials?

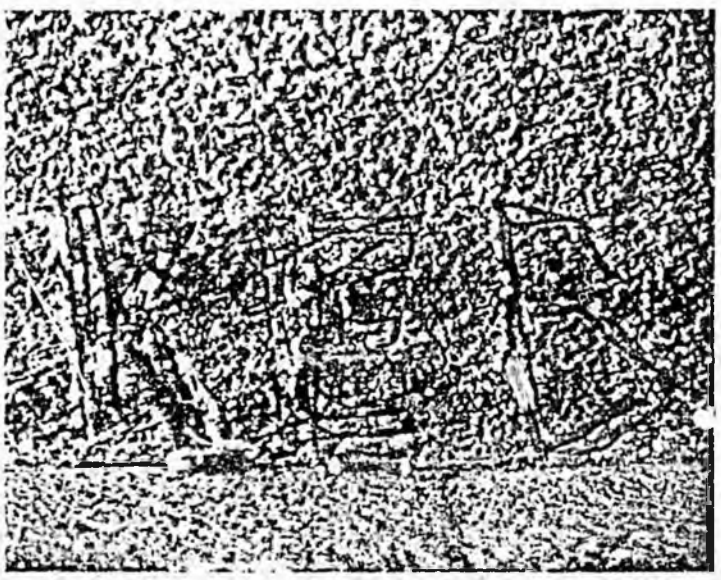
Friable asbestos-containing materials are materials that were used for fireproofing, thermal and acoustical insulation, or decoration in building construction and renovation. The asbestos content of these materials is usually found in the range of 5% to 50%. These materials were usually applied by spraying but have also been applied by troweling. They are friable in varying degrees depending on the components of the material, the amount of cement used, and the method of application. Sprayed material is usually soft. Cementitious material varies from soft to relatively hard.

Throughout this manual, both cementitious and sprayed asbestos-containing materials will be called asbestos materials.

What is sprayed asbestos material?

Sprayed asbestos material is a mixture of asbestos fibers, other fibers (cellulose, non-asbestos mineral fibers) and a binder which has been applied to ceilings, beams, and other surfaces by spraying. It has been widely used for fireproofing, thermal and acoustical insulation, and decoration. Most friable material in schools is sprayed material.

In 1973 EPA prohibited the spraying of asbestos material for fireproofing and insulation. EPA prohibited the application of sprayed asbestos material for nearly all purposes in 1978.



Friable Material That Has Been Scraped

Where are friable asbestos materials located?

Friable asbestos materials are usually found on overhead surfaces, steel beams, ceilings, and occasionally on walls and pipes.

Does all friable material contain asbestos?

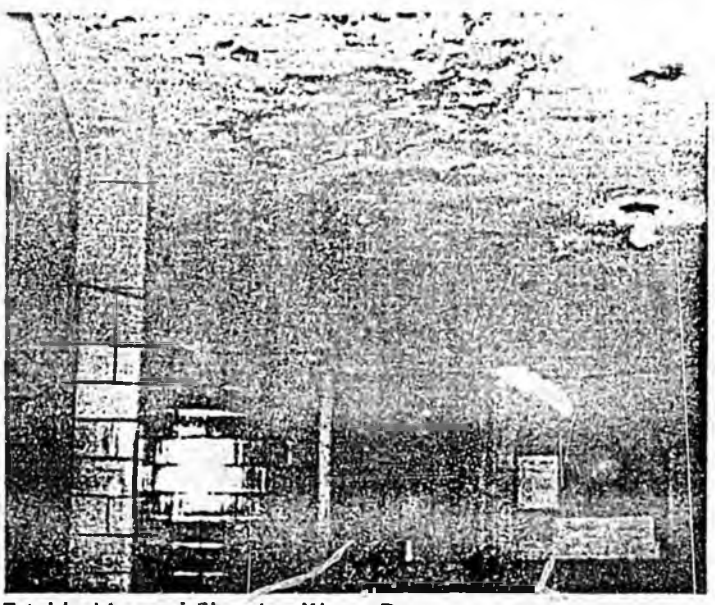
Many materials that look like friable asbestos material do not necessarily contain asbestos. Some friable material contains glass fibers, cellulose, or other non-asbestos fibers.

How are asbestos fibers released from friable asbestos material?

Fibers are released from friable material as a result of a breakdown in the integrity of the material due to deterioration or direct contact and damage.

As friable asbestos material ages, it can lose its cohesive strength and release fibers. Fallout of fibers from deteriorated material is usually low-level but continuous.

Fiber release by contact and damage depends on the accessibility of the material and the degree of disturbance. Contamination can be very high for brief periods of time during a disturbance and then gradually decrease as the fibers settle. Fiber release can occur



Friable Material Showing Water Damage

after only minor contact with friable material.

Direct contact or damage to asbestos materials can occur in a number of ways:

- ***School Activities***—A ball hitting friable material on a gymnasium ceiling or wall. Hanging pictures or attaching displays to friable material will cause fiber release.
- ***Maintenance Activities***—Any maintenance activity involving intentional or accidental contact with friable material.
- ***Vandalism***—Material may be scraped, gouged, or hit.
- ***Water Damage***—Water from roof or plumbing leaks will cause material deterioration and in some cases delamination (i.e., breaking away of layers of material from the underlying surface).
- ***Vibration***—Building vibration from sources within or outside the building. For example, vibration from activities on the floor above or vibration from machinery can cause movement of the friable material and release fibers.

Fibers that have been released can remain suspended in the air for many hours. After the fibers settle, they can be resuspended in the air by disturbances created by student activities or custodial work such as dusting or sweeping. Resuspension of asbestos fibers in the air is called reentrainment. Reentrainment may cause repeated exposures after the fibers are released from the friable asbestos material.

For more information on asbestos contamination, see pages I–2–3 to I–2–11 of Part 2.

Is asbestos contamination permanent once it occurs?

Asbestos fibers tend to remain in the building that they contaminate but can be removed by cleaning. Wet mopping is recommended since water inhibits fiber movement, thus preventing reentrainment during the cleaning process. Dry dusting and sweeping will cause reentrainment and should be avoided. If wet cleaning is not feasible, a High Efficiency Particulate Absolute (HEPA) filtered vacuum should be used. Conventional vacuum cleaning equipment normally used in the school is not equipped with a filter size small enough to collect asbestos fibers and should not be used to clean in areas of asbestos contamination. If conventional vacuum cleaning equipment is used, fibers can be reentrained.

For more information on HEPA filtered vacuums, see page II–4–2 of Part 2.

When should school officials be concerned about asbestos material?

If friable asbestos material is present in the school building, an exposure problem may exist. Chapter 3 outlines the recommended steps to identify friable asbestos material and to undertake a control program to reduce exposure.

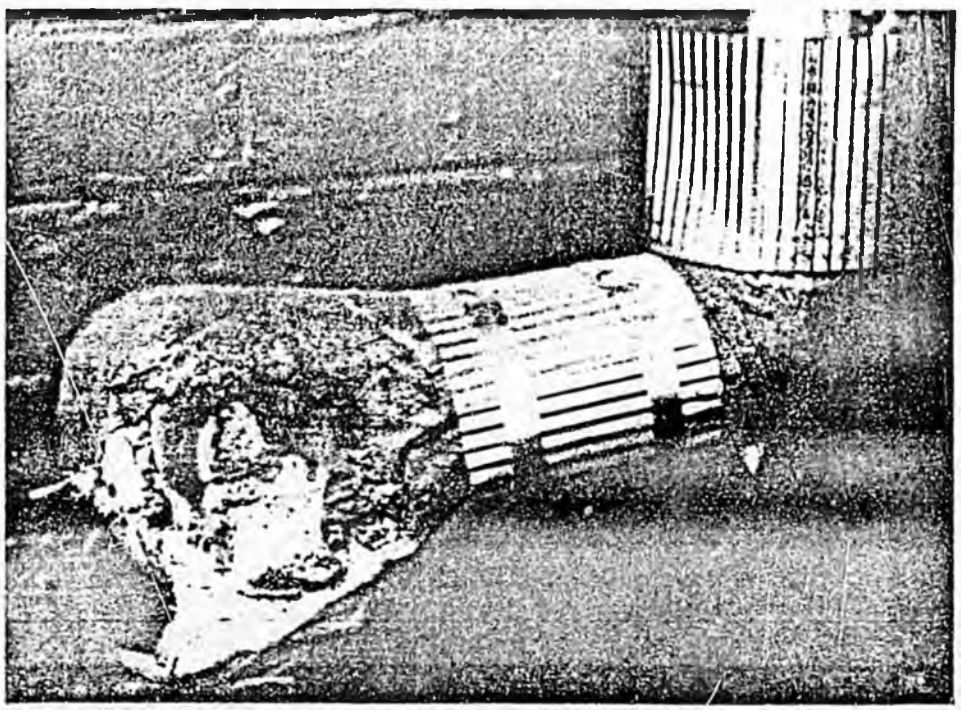
Is pipe covering and boiler lagging of concern?

Friable asbestos material was used for many years in pipe covering and boiler lagging until EPA prohibited its application in 1975. Pipe covering and boiler lagging do not create an exposure hazard unless the friable insulation material is exposed and damaged.

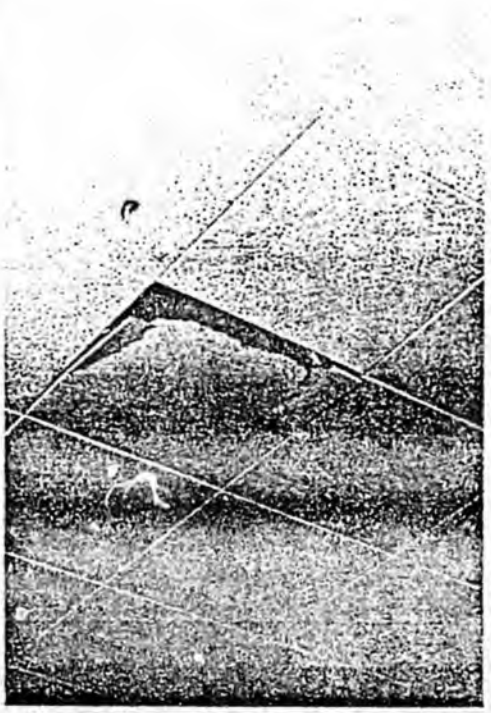
Pipe covering and boiler lagging should be routinely inspected. If the insulation material is exposed, retaping or covering the damaged area will prevent asbestos fiber release.

Is ceiling tile of concern?

Ceiling tiles are not friable and should be of no concern.



Damaged Pipe Covering Showing Friable Insulation Material



Ceiling Tile

ASBESTOS AND THE CONSUMER

A Report
Prepared by the:

Anchorage Air Pollution Control
Agency
Department of Health and
Environmental Protection
Pouch 6-650
Anchorage, AK 99502

Phone No. (907) 264-4713

(August 15, 1983)

Table 3

General Product Types that have Contained Asbestos

Floor Tile

Office floors
Commercial floors
Residence floors

Paints, Coatings and Sealants

Automotive/truck body coatings
Roof coatings and patching compounds

Asbestos Textiles

Packing components
Gasket components
Roofing materials
Commercial/industrial dryer felts
Heat/fire protective clothing
Clutch/transmission components
Electrical wire and pipe insulation
Theater curtains and fire-proof draperies

Gaskets and Packings

Valve components
Flange components
Pump components
Tank sealing components

Asbestos-Reinforced Plastics

Electric motor components
Molded product compounds for high-strength/weight uses

Asbestos Paper

Gas vapor ducts for corrosive compounds
Fireproof absorbent papers
Table pads and heat protective mats
Heat/fire protection components
Molten glass handling equipment
Insulation products
Gasket components

Underlayment for sheet flooring
Electric wire insulation
Filters for beverages
Appliance insulation
Roofing materials

Friction Products

Clutch/transmission components
Brake/components
Industrial friction materials

Asbestos Cement Pipe

Chemical process piping
Water supply piping
Conduits for electric wires

Asbestos Cement Sheet

Hoods, vents for corrosive chemicals
Chemical tanks and vessel manufacturing
Portable construction buildings
Electrical switchboards and components
Residential building materials
Molten metal handling equipment
Industrial building materials
Fire Protection
Insulation products
Small appliance components
Electric motor components
Laboratory furniture
Cooling tower components

* Information in Table 3 from Asbestos Information Association, North America

ASBESTOS IN SCHOOLS AND OTHER BUILDINGS

Indoor Air Conference
December 7-9, 1982

Peter A. Breysse, Associate Professor
Department of Environmental Health
University of Washington
Seattle, WA 98195

ASBESTOS

I. INTRODUCTION

A. Naturally Occurring Fibrous Materials

Type	Source	Production
Chrysotile ($H_4Mg_3Si_2O_9$)	Canada, Rhodesia	93%
Crocidolite ($Na_6Fe_{10}Si_{16}O_{45}(OH)_2$)	South Africa	3.5%
Amosite ($(Fe\ Mg_7)Si_8O_{22}(OH)_2$)	South Africa	3.5%
Anthophyllite ($Mg_7Si_2O_{22}(OH)_2$)	Finland, U.S.A.	0.5%

B. Chemical Composition

1. Major Constituents
   - a. Aluminum
   - b. Iron
   - c. Magnesium
   - d. Sodium
   - e. Sodium as Na_2O
   - f. Oxygen
   - g. Silicon as SiO_2
   - h. Free SiO_2
2. Minor Constituents
   - a. Cobolt
   - b. Chromium
   - c. Manganese
   - d. Nickel
   - e. Antimony
   - f. Scandium

C. Uses of Asbestos

1. Special Textiles
2. Fireproof Textiles
3. Woven Fabrics
4. Acid Resistant Materials
5. Packings
6. Brake and Clutch Linings
7. Electrical and Thermal Insulation
8. Asbestos Cement Pipes and Sheets
9. Gaskets
10. Paper Products
11. Rings
12. Welding Rod Coatings
13. Sound Insulation

D. Sources

1. Home
    a. Roofing
    b. Siding
    c. Insulation Board
    d. Pipes carrying water
    e. Sewage
    f. Gas
    g. Table & Ironing Board Pads
    h. Water Supply
    i. Ovens
    j. Floor Tiles
    k. Draperies
    l. Rugs
    m. Electrical Equipment
    n. Acoustical Ceiling
    o. Talc (Impurity)
    p. Covering on Heating Ducts
    q. Taping Compound
    r. Dry Wall

SSHB 5 QUESTIONS

1. Since the scope of asbestos abatement certification includes school district personnel, how much will it cost the Department of Education to train their personnel in the fifty five school districts?

2. Where will this training take place? At the respective school? Or at a central Location? What are the travel costs?

3. What are the training guidelines?

4. Will the training take one day? seven days? thirty days?

5. Who will teach the instructor/trainers?
How many are needed for the state?
How long will this course be?
How many times a year will this course be conducted?

6. What will be the review period time frame for Department of Labor to certify an:
owner program?
employee program?
employee organization program?

7. What is the cost of training an employee?
What is the cost of training an owner?
What is the cost of training an instructor/trainer?

8. If asbestos abatement work cannot commence unless an individual is certified, what happens in an emergency (i.e., boiler malfunction in a school's mechanical room on a cold day) and there is not a certified maintenance person?

9. What are the guideline requirements?

10. Who will certify the transporters of asbestos debris?

11. Who will certify the landfill operator?

12. Do all of the states landfills have an asbestos disposal policy?

13. Do all landfills accept asbestos?

14. What storage certification guidelines are proposed?
New products?
Old products?
What level is considered certifiable?

15. Department of Labor, in its Position Paper, suggests that the Enviromental Protection Agency surveys were not conducted by a qualified person. Will they re-survey all of the previous Enviromental Protection Avency surveys? What will be the cost?

16. There is a considerable amount of duplication of the current Enviromental Protection Agency School Asbestos Removal Requirements and the SSHB 5's Department of Labor requirements? What is the purpose of this duplication? What is Enviromental Protection Agency's position on the duplicity?

1. The bill requires the training and certification of employees. It also requires the employers have a certified training program for their employees but, who is going to train the employers on how to train their employees?

2. Who is going to teach these courses for the employees and employers?

3. Who in the State is certified to train employees and employers?

4. Who is responsible for identifying abestos in schools?
   A. BIA Schools -
   B. Local Schools
   C. Private Schools

5. The bill mentions city and borough schools and regional educational attendance area schools; Does this mean that there is no abestos at the Community Colleges, University of Alaska, Career Centers - Vocational Educational facilities, private schools and Universities?

6. Who is responsible for identifying abestos in state, local and private buildings?

7. If the owner (state or local government) of a building is unable to identify that abestos exist or does not know it is there; upon the start up of the job the contractor discovers abestos, will the job have to be stopped while the employer and employees are trained and certified?

8. Who is responsible to assure that abestos is properly disposed of?

9. Are all of the land fill sites familar with disposal regulations? Are all land fills accepting abestos?

10. What is the purpose of the Certification program?

11. What are the certification requirements? If response is we do not have any at this time: Follow-up:
   How long will it take the Department of Labor to develop the certification program and regulations?
   Who will develop the program and regulations and what is their experience in developing such programs and regulations?
   Will the Department have to contract out to a firm to develop the program? And how long will this take?

12. If there is an abatement project going on and this bill passes with an immediate effective date: Will the Department stop the job until it can develop regulations and certification program and employees and employers are trained and certified?

13. Page 3, line 16 requires respirator test: What kind of test is being anticipated? If the use of a machine: What is the cost of the machine and who will pay for it?

14. What kind of training program is going to be required for land fill employees and employers.

15. What kind of training program is going to be required for the transportation industry employers and employees?

16. At what level of abestos exposure will require the traning and certification? Number of fibers in the air? What if the material is entact and not releasing fibers into the air, such as replacing vinyl asbestos floor tile.

17. Alot of times abestos insulation around pipes in boiler rooms at schools is removed by the city maintenance crew, are these people going to have to be trained and certified for a one time project. What about state maintenance crews removing abestos from state buildings.

18. How are the people in the bush communities going to become trained? Travel to Anchorage? Travel to Fairbanks?

19. What is the cost for cities, contractors, employee groups to implement the program?

20. Does the Department of Labor have sufficient personnel to monitor for compliance the various abatement projects in urban and bush communities? How much is thier travel budget to go to bush communities?

21. What happens in an emergency situation. The pipes at a school, which are insulated with abestos, freeze; the city maintenance crew or in a small community that has only one or two construction firms, none of which are certified; will the school district have to wait for these people to become certified? - take a training course, establish a training program and become certified by the Department of Labor - How long will this take?

22. How long, from date of submission of a certification program to approval by the Department of Labor?

23. In the fiscal note, FY 86 has two hygienist and one Clerk typist III. One of the hygienist will survey approximately 40 buildings and evaluate the certification program, the other hygieniest will survey 30 buildings and assist in evaluating the employer certification program and the typist will provide support for the evaluation of employer and employee training certification program. With the hygienist out surveying the schools; is this really enough personnel to do a proper job? Or will the Clerk typist be the person really approving the various employer and employee training certification programs?

24. In the fiscal note, FY 87 has one hygienist and one clerk typist III. Does the Department anticipate that all of the abestos abatement projects will be completed by that time? Or that just a few will be going on?

25. In the fiscal note, FY 88, FY 89, FY 90 list no funding for this program. Is the Department assuming that all abestos, in all public buildings, will have been taken care of? Or that all contractors have a certified program in place? What about newly discovered abestos, what about a contractor wanting to branch out and get into the business of abestos abatment? There is no funds for those years does this mean that we will have an exclusive club of abestos abatement contractors that were certified during FY 86 and FY 87?

26. During the hearing January 22, 1985 there was no testimony from the Department of Education. What is their position on the certificatio program?

27. At the present time the Department of Transportation has out for bid the Mt. Edgecumbe School project. A portion of the job is asbestos abatement. This project is an Indian Preference project subject to Section 7(b) of the Indian Self-Determination Act (Public Law 93-639). What effect will the certification program have on this project? There are certain time constraints imposed by the BIA for completion of the project. Will the certification program cause any problems for this project? Is there the potential that the State could loose upto $22 million if this project is delayed?

A-18

Dec. 1/7 S.S.

Mount Edgecumbe School Facilities Renovations State of Alaska DOT/PF Southeast Region

SPECIFICATIONS

prepared for:

State of Alaska Department of Education

Note: This project is subject to Section 7(b) of the Indian Self-Determination Act (Public Law 93-638). Please carefully review Section 00820 of this project manual.

PROJECT NUMBER R-30048

charles bettisworth and company

architecture · planning · project development

00819 - Where discrepancies occur between Sections 00820 through 00833 and other provisions within this Project Manual, Sections 00820 through 00833 shall govern.

00820 INDIAN PREFERENCE

A. Synopsis of the Requirement.

This project is subject to Section 7(b) of the Indian Self-Determination Act (Public Law 93-638). Therefore the following two distinct requirements shall apply to this contract:

(1) To the maximum extent feasible, preference and opportunities for training and employment in connection with the administration of this contract shall be given to Indians; and

(2) preference in the award of subcontracts in connection with the administration of this contract shall be given to Indian organizations and to Indian-owned economic enterprises.

B. Definitions.

The following definitions apply to this Section:

(1) Indian: Individuals who are one-quarter or more American Indian and are enrolled to a Federally recognized tribe; including Alaska Natives (Indian, Aleut or Eskimo).

(2) Indian Tribe: An Indian tribe, band, nation or other organized group or community, including any Alaska Native Village or Regional or Village Corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

(3) Indian Business Concern: Also refers to "Indian-owned economic enterprise" and means any Indian owned commercial, industrial or other business activity established or organized for the purpose of profit; provided that such Indian ownership and control shall not be less than 51% of the enterprise.

(4) Contractor: The individual, firm, corporation, or any acceptable combination thereof, contracting with the Department of Transportation and Public Facilities for performance of prescribed work.

(5) Subcontractor: An individual, firm, or corporation to whom the Contractor sublets part of the contract.

(6) Indian Preference Compliance Officer: The individual on the project whose main responsibility is to advise the Project Manager on matters

pertaining to Indian Preference Compliance. This individual also will be the Department's liaison officer with the Bureau of Indian Affairs and the Sitka Community Association on Indian Preference matters.

(7) Prequalified Subcontractors List: A list of contractors who qualify as a 51% Indian-owned and controlled firm and who have indicated an interest in obtaining a subcontract on this project.

(8) Prequalified Preference List: A list of contractors who qualify as a 51% Indian-owned and controlled firm who have indicated an interest in obtaining the prime contract on this project.

(9) Department: Alaska Department of Transportation and Public Facilities.

C. Bidding Requirements.

An Indian Preference Plan, which shall be approved by B.I.A. before submitted, shall be submitted with bids by Contractors showing the Department how the Indian Preference requirements will be implemented. Questions concerning approval of the Indian Preference Plan should be directed to the office of Ronald Williams, Bureau of Indian Affairs, Employment Assistance Branch, P.O. Box 3-8000, Juneau, Alaska 99802, Telephone: (907) 586-7600. This plan will become a binding part of this Contract and shall be updated whenever required.

MT. EDGECUMBE SCHOOL
FACILITIES RENOVATIONS
STATE OF ALASKA
DOT/PF
SOUTHEAST REGION

DIVISION 2
SECTION 02071
ASBESTOS REMOVAL

PART I - GENERAL

1.01 Scope

A. Remove all asbestos insulation for existing boilers, breeching, piping, tanks, and all other equipment, and dispose of at an approved site. Much of the insulation does contain asbestos.

B. Contractor shall furnish all labor, materials, services, insurance, and equipment in accordance with Contract Documents and all applicable regulations to complete the work.

C. Contractor will view the extent of removal required at a site visit. Much of the insulation present is asbestos.

D. A schedule of asbestos locations is included at the end of this section of the specifications.

E. Buildings 202 and 211 will be included for asbestos removal for this project.

1.02 Reference Standards

A. General: Work must comply with all applicable ordinances and regulations. Regulatory emphasis will be placed on State of Alaska standards below.

B. State of Alaska: Occupational Safety and Health Standards, Alaska Department of Labor, Subchapter 04.0102, Asbestos. Copied excerpts from this standard are furnished for the Contractor's convenience.

1.03 Quality Assurance

A. Qualifications of Contractor: Work of asbestos removal including isolation of the affected area and worker protection measures shall be contracted to a firm having experience equal to three jobs of similar scope in the last three years. The successful bidder shall submit full listing of applicable jobs with letters of reference from at least two Owners from previous jobs. Also submit

resume of detailed asbestos related training of key personnel, which must be reviewed and approved by the State of Alaska Division of Occupational Safety and Health (DOSH).

B. Air Monitoring: Test shall be conducted as specified in 1.05 below.

1.04 Submittals

A. Schedules required are specified in Division 1.

B. Certifications: Provide the following:

1. Certificates of Compliance with ANSI Z9.2 of Contractor's vacuums and other equipment required to contain filtering.

2. Name, address, and phone number of the environmental testing laboratory selected by the Contractor, to be A.I.H.A. approved.

3. Tools, safety equipment, and safety clothing proposed to be used.

4. Items specified in paragraph 1.05 below.

5. The Contractor shall furnish proof that each of his employees involved in the work of this section has been given respirator evaluation and training, and medical examinations, in accordance with CFR 29.1910.1001, and OHEC 04.0103.

C. Reports: See 1.05 below.

1.05 Environmental Testing

A. General: The Contractor shall obtain the services of an industrial hygienist or environmental health testing laboratory for monitoring of asbestos exposure levels. The laboratory shall be required

b. A reference standard will be sampled in each location prior to removal, and another three days after complete removal.

D. Location of Sampling Device: Sampling devices shall be located as directed by the Contracting Officer. At times one asbestos worker shall be required to wear a sampling device. In addition, the environment of the temporary storage of asbestos waste material shall be monitored. Generally, the mounting height of the sampling filter shall be within the breathing zone of personnel.

E. Methods of Measurement: All determination of airborne concentrations of asbestos fibers shall be made by the membrane filter method using phase contrast illumination and 400 X 500 X magnification, with sample mounted in high viscosity solution of membrane filter material.

F. Report Submittals: Submit in triplicate (original and two copies) a list of fiber counts to the Contracting Officer or his authorized representative. The document shall list person's name and job title, flow rate of pump, time on and off, each sample's TWA count, time and date, and exact location of where it was taken. Floor plans referencing the sample locations and time and date shall be attached to the document. The document shall bear the following statement:

"I certify that the above samples were taken and the fiber counts performed in strict compliance with standards and regulations."

(Signature of Certifying Official)

Copies of the document shall be furnished to the Contracting Officer. Records of all environmental monitoring shall be maintained.

G. The success and thoroughness of asbestos removal shall not only be evaluated by ambient air fiber sampling, but also by visually inspecting the affected surfaces for residual asbestos material and accumulated dust.

1.06 Agency Approval

A. Disposal Approval: Asbestos removal work shall not commence until Contractor has obtained written approval from the Alaska Department of Environmental Conservation for Contractor's proposed disposal site and methods for both solid and liquid asbestos contaminated materials.

B. Demolition Permit: Contractor shall obtain a demolition permit from the City and Borough of Sitka.

C. EPA notification required.

PART II - PRODUCTS

2.01 Storage And Handling

A. Delivery: Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.

B. Storage: Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.

C. Damaged Materials: Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with the applicable regulations.

2.02 Materials

A. Plastic Sheets: Provide 6 mils thick, in sizes to minimize the frequency of joints.

B. Tape: Glass fiber or other type capable of sealing joints of adjacent sheets of plastic sheets and for attachment of plastic sheet of finished or unfinished surfaces of dissimilar materials under both dry and wet conditions, including use of amended water.

C. Surfactant Wetting Agent: Provide agent consisting of 50% polyoxyethlene ether and 50% of polyosyethylene or polyglycol ester, or equivalent. Mix with water to provide a concentration of one ounce surfactant to 5 gallons of water.

D. Impermeable Containers: Provide containers suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site. The containers shall be labeled in accordance with OSHA Regulation 29 FCFR 1910.1001. Containers must be both air- and water-tight.

E. Warning Labels and Sign: Provide as required by referenced standards.

F. Other Materials: Provide all other materials, such as lumber, nails, and hardware, which may be required to construct and dismantle the decontamination area and the barriers that isolate the work area.

2.03 Tools And Equipment

A. General: Provide suitable tools for asbestos removal. Hand-held scraper, bristle brushes, sponges, etc.

B. The Contractor shall completely isolate all areas before commencing any other work in order to contain contaminants and prevent dispersement. Prevent any air transfer between contaminated and clean areas until decontamination and cleanup are complete.

C. Signs and Markings: Post signs prior to asbestos removal as required in State Occupational Safety and Health Standards. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visability at least equal to that specified in this subdivision.

Legend	Notation
Asbestos	1" Sans Serif, Gothic or block
Dust Hazard	3/4" Sans Serif, Gothic or block
Avoid Breathing	1/4" Gothic
Wear Assigned Protective Equipment	1/4" Gothic
Do Not Remain in Area Unless Your Work Requires It	1/4" Gothic
Breathing Asbestos Dust May Be Hazardous To Your Health	1/4" Gothic

1. Spacing between lines shall be at least equal to the height of the upper of any two lines.

2. The signs shall be posted near the perimeter of the building and along the route to the temporary holding area of the waste material.

D. Decontamination Room, Clean Room, and Toilet: It is the Contractor's responsibility to furnish material and labor for the construction of a decontamination and clean room. The rooms shall be of sufficient size to accommodate the Contractor's operation within. Existing toilet facilities with water closets, urinals, and wash basins will not be made available to the Contractor. A portable shower shall be installed within the toilet area. All asbestos workers shall shower before leaving the site at the close of the workshift. Water supply and waste removal is not presently available at the site.

1. Purpose of decontamination room: To provide an intermediate area of lesser asbestos fiber pollution for decontamination of asbestos-contaminated materials, i.e., tools, equipment, personnel, etc. This room shall be periodically vacuumed through a HEPA to avoid asbestos dust accumulations. It also serves as access area to toilets for workers wearing contaminated clothing. Workers shall be vacuumed from head to toe each time upon entering the decontamination room from the demolition site. In case of emergency, aid for a seriously injured worker shall not be delayed for reasons of decontamination.

2. Purpose of clean room: To store asbestos workers' street clothing, clean protective clothing and equipment, to provide dressing area for personnel, and storage of foodstuffs. Contaminated clothing shall not be allowed to be worn in this room and in unmasked areas.

3. Smoking, eating, and drinking: Shall NOT be permitted at any time in the decontamination room or at any time in areas where asbestos removal activities are conducted before decontamination is complete.

E. Preclean movable objects within the proposed work areas using HEPA vacuum equipment and/or wet cleaning methods as deemed appropriate, and remove such objects from work areas to a temporary location in assigned area.

F. Preclean immovable objects, such as casework, plant, and equipment, within the proposed work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate, and enclose with 6 mil plastic sheeting sealed with tape.

G. Clean the proposed work areas using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

H. Seal off all openings such as corridors, doorways, skylights, ducts, grills, diffusers, and any other penetrations of work areas with plastic sheeting sealed with tape. Doorways and corridors which will not be used for passage during work must be sealed. Building suitable floor to ceiling wood or metal framing and apply minimum 3/8" thickness plywood on the work side.

I. Cover floor and wall surfaces with plastic sheeting sealed with tape. Use a minimum of two layers of 6 mil plastic on floors. Cover floors first so that plastic extends at least 12 inches up on walls, then cover walls with minimum 4 mil plastic sheeting to floor level; thus overlapping the floor material by a minimum of 12 inches.

J. Build airlocks at all entrances to and exits from the work areas.

K. Maintain emergency and fire exits from the areas, or satisfactory to the Fire Marshal.

3.02 Worker Protection

A. General: Requirements listed below are in addition to safety measures specified in Parts 1 and 2 and 3.01 above. Where any of these detailed requirements are in conflict with each other or with applicable regulatioins or reference standards, the more stringent requirement will control.

B. Instruction: Prior to commencement of work, the worker shall be instructed and shall be knowledgeable in the hazards of asbestos exposure on use and fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures.

C. Personal Equipment:

1. Provide workers with personally issued and marked respiratory equipment approved by NIOSH and MSHA and suitable for the asbestos exposure level in the work area according to OSHA Standard 29 CFR 1910.1001. Where respirators with disposable filters are employed, provide sufficient filters for replacement as necessary by the worker, or as required by the applicable regulations. Workers must be trained to wear and care for respirators. A written standard operating procedure governing the selection and use of respirator equipment re GSC 01.0403(b)(1) through (11) is required. Also a fit test is required. Respirators are to be checked daily by a foreman so qualified and designated.

2. Provide authorized visitors with suitable respirators with fresh filters or cartridges whenever they are required to enter the work area, to a maximum of 5 per day.

3. Provide workers with sufficient sets of protective full body clothing. Such clothing shall consist of full body coveralls and headgear. Provide eye protection and hard hats as required by applicable safety regulations. Nondisposable clothing and footwear shall be left in the Contamination Equipment Room until the end of the asbestos abatement work, at which time such items shall be disposed of as asbestos waste, or shall be thoroughly cleaned of all asbestos or asbestos-containing material. Disposable clothing, headgear, and footwear may be provided.

4. Provide authorized visitors with a set of suitable protective clothing, headgear, eye protection, and footwear, as described in paragraph 3.02, C.3, whenever they are required to enter the work area, to a maximum of 3 sets per day.

5. Provide and post, in the Equipment Room and Clean Room, the decontamination and work procedures to be followed by workers, as described in 3.02D of these specifications.

D. Protection Procedures:

1. Each worker and authorized visitor shall, upon entering the jobsite, remove street clothes in the clean change room and put on a respirator with new filters and protective clothing before entering the equipment and access areas or the work area.

2. Work Decontamination: Each worker and authorized visitor shall, each time he leaves the work area, remove gross contamination from clothing before leaving work area; proceed to the equipment area and remove all

clothing except respirators; still wearing the respirator proceed naked to the showers; clean the outside of the respirator with soap and water while showering; remove the respirator; thoroughly shampoo and wash themselves; remove filters and wet them and dispose of filters in the container provided for the purpose; and wash and rinse the inside of respirator.

3. Following showering and drying off, each worker and authorized visitor shall proceed directly to the clean change room and dress in street clothes at the end of each day's work, or in clean coveralls before eating, smoking, drinking, or re-entering the work area.

4. Provide disposable plastic shower covering. Workers to have steel toed boots. Store contaminated worksuits in the equipment room for reuse or place in receptacles for disposal with other asbestos-contaminated materials.

5. Workers removing waste containers from the equipment decontamination enclosure shall enter the washroom from outside wearing a respirator and dressed in clean coveralls. No worker shall use this system as a means to leave or enter the work area.

6. Workers shall be fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual asbestos abatement and until final cleanup is completed.

3.03 Asbestos Removal:

A. General: Do not proceed with asbestos removal until all specified preparations, approvals, and safety measures have been performed.

B. Wetting: Spray asbestos material with amended water, using spray equipment capable of providing a "mist" application to prevent release of airborne fibers. Saturate the material sufficiently to wet it to the substrate without causing excess dripping. Spray the asbestos material repeatedly during work process to maintain wet condition and to minimize asbestos fiber dispersion.

C. Removal: Remove the saturated asbestos material in small sections (see item D. below). As it is removed, pack the material in sealable plastic bags of 6 mil minimum thickness and place in labeled containers for transport. Material shall not be allowed to dry out.

D. Piping may be removed intact if wrapped in plastic air tight sleeve. If piping is not removed, it must be thoroughly cleaned to remove all trace of asbestos.

E. Security of Contaminated Waste: Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to washroom. Clean and move to uncontaminated area. Ensure that workers do not enter from uncontaminated areas into the washroom and work areas.

F. Surface Cleaning: After completion of striping work, all surfaces from which asbestos has been removed shall be wire brushed and/or wet sponged to remove all visible material. During this work the surfaces being cleaned shall be kept wet.

3.04 Cleaning

A. General: Follow the sequence given below unless Owner's consent is obtained in writing for any specific deviation.

B. Sequence:

1. Remove the plastic sheets from walls and floors only. The windows, doors, and HVAC vents shall remain sealed and any HEPA filtration negative air pressure systems, air filtration, and decontamination enclosure systems shall remain in service.

2. Clean all surfaces in the work area and any other contaminated areas with water and/or with HEPA vacuum equipment. After cleaning the work area, wait 24 hours to allow for settlement of dust, and again wet clean or clean with HEPA vacuum equipment all surfaces in the work area. After completion of the second cleaning operation, perform a complete visual inspection of the work area to ensure that the work area is dust free.

3. Sealed drums and all equipment used in the work area shall be included in the cleanup and shall be removed from work areas, via the equipment decontamination enclosure system, at an appropriate time in the cleaning sequence.

3.05 Final Decontamination Measures And Checks

A. Transport from Site: As the work progresses, remove sealed and labeled containers of contaminated waste and dispose of as contaminated waste. Do not store contaminated waste on site except where secured in transport vehicle in such a manner as to prevent accidental spillage by persons, animals, or the elements.

B. Enclosure Removal: When a thorough inspection determines that the area has been decontaminated, the decontamination enclosure systems shall be removed, the area thoroughly wet cleaned, and materials from the equipment room and shower

disposed of as contaminated waste. The remaining barriers between contaminated and clean areas and all seals on openings into that work area and fixtures shall be removed and disposed of as contaminated waste. A final check shall be carried out to ensure that no dust or debris remains on surfaces as a result of dismantling operations.

C. Additional Cleaning: If the building owner finds that the work area has not been decontaminated, the Contractor shall repeat the wet cleaning until the work area is in compliance.

3.06 Asbestos Location Schedule

A. An official definitive asbestos survey of the extent of asbestos in the Mount Edgecumbe School Building Complex has not been made. The following schedule of asbestos locations in the buildings was compiled by maintenance personnel to provide assistance to the contractor. The extent of asbestos in the buildings is not necessarily limited to that identified herein.

B. Schedule:

1. Building 290

a. Crawl Space: Asbestos insulation on steam piping throughout.

b. Basement: Asbestos insulation on piping and hot water tanks.

c. First Floor: Bakery storage, bakery and kitchen area has asbestos insulation on steam piping. The dining hall has no asbestos, that is readily evident.

d. Second Floor: No asbestos evident.

e. Enclosed Walkway between building 289 and 290 has asbestos insulated steam piping.

2. Building 289

   a. Contains some asbestos insulated steam piping.

3. Building 291

   a. No asbestos evident - possible exception in crawl space.

4. Building 292

   a. Crawl Space: Asbestos insulation on steam piping throughout. Note: There is also discarded asbestos insulation from repairs made to the system at points throughout the crawl spaces.

   b. First Floor: There is asbestos insulation on steam lines leading to the 2nd floor throughout.

   c. Mechanical Room: Contains asbestos insulated steam piping. The hot water tank is bagged with a magnesium silicate material.

   d. Second Floor: There is no asbestos evident. Note: There may be asbestos insulation on piping in the walls throughout the school.

   e. Third Floor: Contains no asbestos material that is readily evident.

5. Building 293

   a. Mechanical Room: Has extensive asbestos insulated piping and has a hot water tank that is insulated with asbestos.

   b. Basement: Has asbestos insulated steam piping.

c. Crawl Space: Has asbestos insulated steam piping throughout.

d. First Floor: Steam piping leading to 2nd floor has asbestos insulation, except where repairs have been made. These pipes have fiberglass insulation.

e. Second Floor: As with the first floor, steam piping leading to the next floor above that is original piping and is insulated with asbestos. There is also asbestos cement wallboard in the showerstall in room #213 d.

f. Third Floor: Asbestos wallboard in washroom/shower areas.

6. Building 297

a. Crawl Space: Has asbestos insulated steam piping throughout.

b. Transformer Vault: No asbestos evident.

c. Mechanical Room:

d. First Floor: Room No.'s 102, 107 and 108 have asbestos insulated steam piping. The men's room possibly has an asbestos material in the finish coating on the concrete wall.

e. Second Floor: No asbestos pipe insulation remaining.

f. Third Floor: All wallboard is of a current asbestos material. The wall finish on the concrete walls and ceiling of the observation deck may contain asbestos.

7. Building 331

a. Gymnasium: Has extensive steam piping throughout that is insulated with asbestos material.

b. Second Floor: There appears to be only 2 steam lines running up to the old FAA tower that are insulated with asbestos containing material.

c. Old FAA Tower: Has steam piping with asbestos insulation.

8. Building 202

a. Basement: Has asbestos insulation on the supply and return lines for the hot water boiler.

b. First and Second Floors: Have asbestos insulated piping, some of which may be in the walls.

9. Building 211

a. The basement has extensive piping that is insulated with asbestos material.

b. First and Second Floors: Have asbestos insulated pipe in the walls.

END OF SECTION

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF LAW

OFFICE OF THE ATTORNEY GENERAL

POUCH K – STATE CAPITOL
JUNEAU, ALASKA 99811
PHONE: (907) 465-3600

January 25, 1985

Honorable Max F. Gruenberg, Jr.
Co-Chair
House Committee on Health, Education
and Social Services
Alaska State Legislature
Pouch V
Juneau, AK 99811

Dear Representative Gruenberg:

I am responding to your letter of January 23, 1985, inquiring whether inclusion of the proposed provisions of section 1 of SSHB 5 is necessary, in light of certain advice provided by this office to the Commissioner of Education last summer. A copy of that Memorandum of Advice is attached for your information.

While probably not necessary to deal with the most egregious asbestos situations, I suspect there still could be a variety of situations arising which, although not qualifying as a "emergency" under the general provisions of AS 14.03.030(2), would nonetheless fall within the scope of the proposed language in section 1 of SSHB 5. Consequently, I believe it would be advisable to include that language in the bill, both to assure that these lower-level asbestos problems are encompassed within the "emergency closure" provisions and to clarify the Commissioner of Education's authority in this regard.

Sincerely,

NORMAN C. GORSUCH
ATTORNEY GENERAL

By:
Ronald W. Lorensen
Deputy Attorney General

RWL:vrb

cc: Honorable Harold Raynolds
Commissioner
Department of Education

MEMORANDUM State of Alaska

TO: The Honorable Harold Reynolds
Commissioner
Department of Education

DATE: August 29, 1984

FILE NO: 366-017-85

TELEPHONE NO: 465-3600

FROM: Norman C. Gorsuch
Attorney General

By: Ronald W. Gorsuch
Deputy Attorney General
Department

SUBJECT: Emergency school closures under AS 14.03.030(2)

This confirms our conversation on Thursday, August 23, 1984.

Upon further review and analysis, I believe some clarification of my May 28, 1984, */ letter to Senator Joe Josephson regarding the scope of the "emergency school closure" provision of AS 14.03.030(2) is in order. In that letter I indicated in fairly absolute terms that planned activities such as an asbestos abatement program could never qualify as adequate grounds for an "emergency school closure."

The May 28 letter does not adequately acknowledge the discretion which AS 14.03.030(2) vests in you, as Commissioner of Education, to determine what constitutes an "emergency" justifying deviation from the normal 180-day school term. Under the law, "emergency closure days" may only be substituted for days in session with your approval. Since the legislature did not define "emergency" under AS 14.03.030(2), it is left to you to apply the appropriate standard and conditions for granting an "emergency school closure" based on the general policy and purposes underlying the school laws. See, e.g., Kenai Peninsula Fishermen's Co-op Association v. State, 628 P.2d 897, 907 (Alaska 1981).

As I indicated in my May 28 letter, pre-planned construction or maintenance activities would not normally be considered to constitute a situation covered by AS 14.03.030(2). However, that general conclusion should not be taken as implying that you may never approve a closure for a pre-planned activity when, in the exercise of your discretion in reviewing a specific case, you conclude that an emergency situation exists.

RWL:vrb

cc: Honorable Joe Josephson
Alaska State Senator

*/ Redated for printing July 1, 1984: 1984 Inf. Op. Att'y Gen. (July 1; 366-017-85).

THIS SHOULD BE DELIVERED TO THE CMTE RIGHT AWAY FOR THE ON-GOIN T/C

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FROM: Meo. Riley, UAF PHONE: _____

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FROM: George Kelley
U.A.F.

(1)

These will be my comments and presentation at the teleconference this afternoon. Call me if you think I should add anything.

Notes:

1. Regarding the comment about failure of an encapsulation program in Jefferson County, Missouri - I attempted to contact the people there and found there are 16 school districts in Jefferson County and I am not sure which one Mr. Freeman was referring to, however, the superintendent's office of the Fox School District in Jefferson County told me they had indeed encapsulated some material in there hallways and as far as they knew, there was no problem with their program.

2. I have put together a package of some material that I gathered on products available for encapsulation and sent them along to Rep. Pettyjohn and Rep. Koponen's office and would hope they would arrive by next week and I'm sure that they would be able to share that information with any interested parties.

3 I AM ALSO HERE IN SUPPORT OF THE CERTIFICATION PROVISIONS OF HOUSE BILL 5

4 3. I would like to relate to you an outline of an asbestos abatement program for the University of Alaska-Fairbanks.

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4. For those who might be interested, Dr. Cohen, a consultant who deals specifically with asbestos containing materials and their control, will be in Anchorage next week from Wednesday thru Friday. Anyone who may wish to speak to him directly, can call him at his California office at the following number - 619-579-6233. I spoke with him on the phone today and he said he would be happy to answer any questions which you might have on the subject.

1. Regarding the question of the encapsulation program in Jefferson County, Colorado that supposedly failed, I spoke with Bud Barber, the Director of the maintenance department for the school district. He told me that between 1982 and 1983 they did both a removal and encapsulation program in 90 schools withing their district. A majority of this work was an encapsulation program. Mr. Barber states that there have been no problems with any of the encapsulated areas and in fact they have recently received a commendation from the EPA for there monitoring and record keeping system.

(2)

ASBESTOS RISK ABATEMENT PROGRAM FOR UNIVERSITY OF ALASKA-FAIRBANKS

The Fairbanks campus has 46 buildings, which translates into 2,168,000 square feet of functional space, along with a 20 megawatt coal and oil fired steam, heat and electric generating power plant and 5 miles of utilidor system, which provides utility support for the entire campus.

Much of the piping in the buildings, power plant and utilidor is covered with asbestos containing material. Additionally there is duct work in some buildings that is protected with rigid asbestos containing insulating board and several buildings have spray on fire protection material on steel beams and columns, much of which contains asbestos.

We are presently in the process of doing air and bulk sampling to determine the extent of our risk exposure. We know now that there are a number of areas that will need attention. We intend to address this in the following way:

1. Hire a qualified consultant with credentials in safety and health and hopefully a background in engineering and the sciences, to come to our campus and train a multi-disciplinary team of craft persons to be able to properly handle any small removal and replacement job dealing with asbestos material. In addition, begin on a program basis, the process of encapsulating, covering and protecting from mechanical damage the many miles of piping here on campus. It is our intention that the majority of the work in controlling asbestos contamination, will be by nature one or more methods of encapsulation. This is consistent with comments made to us by Dr. Kenneth Cohen, a consultant on the subject, that quotes a recent EPA statement that removal should be the last option in any asbestos hazard control program and they recommend strongly against it.

2. Where there is a large contaminated area beyond the ability of our staff to manage by removal or encapsulation, we would intend to select a qualified contractor to perform the job.

3. Our program will include the purchase of specialized equipment and materials utilizing the latest technology equipment, such as high efficiency filtered vacuum cleaners and specialized spray equipment along with complete personal protection and respiratory equipment for the workers along with the latest and most efficient products for encapsulation that also provide a safe method for eventual disposal and removal of asbestos containing materials when necessary. When insulated or fire protected material is removed it must be considered that the cost of a suitable and functional asbestos free replacement product and its installation be included in the project budget.

4. It is our intention to work with others in the state and promote the development and utilization of more accurate air monitoring techniques, as we agree with Dr. Thorn that the present industrial based methods of air sampling are not adequate to address our concerns for a safe public environment. We would suggest then that we pursue a method of air testing that establishes a standard base background level in the environment, whether induced by natural levels or man made products and we use this standard base outdoor level as a minimum standard that

we hold ourselves to indoors. The concept is much the same as that used for monitoring and setting standards for radiation exposure. We intend here at the University of Alaska-Fairbanks, that a monitoring program be a continuous one, and that regular visual and air monitoring checks be part of our ongoing maintenance. It should be understood that this kind of monitoring program will represent some greater costs than the kind of sampling routine we have been using in the past, however, it will be generating information on which we can make prudent and reasonable judgements.

We have been asked to come up with a rough estimate of the potential costs for this program and we believe that we should be able to accomplish all of the above and control the risk of asbestos containing materials here on the Fairbanks campus at an estimated cost of $1.5 million. It should be considered that although the Fairbanks campus is the oldest and largest campus in the University of Alaska system, we might anticipate that we would find some asbestos containing materials in buildings on other campuses and they too may be looking for some funding to abate the risk in their areas.

In the process of researching this matter, we have made some useful contacts and obtained data that may be of interest to others and we look forward to working together with other individuals and organizations in the State of Alaska for our mutual benefit.

CSG Backgrounder

States Information Center
The Council of State Governments
Iron Works Pike
P.O. Box 11910
Lexington, KY 40578
(606) 252-2291

Date: November, 1984

Topic: ASBESTOS

Infokey: Public Protection

ASBESTOS IN BUILDINGS

Asbestos: The Mineral and Its Uses

The term "asbestos" refers to a unique group of naturally-occurring, fibrous minerals useful because of their special properties. Asbestos is found in rock formations throughout the United States and other parts of the world. Air, wind and water erosion of these natural deposits, and mining, manufacture and use of some asbestos-containing products results in asbestos being found commonly in outside and indoor air, as well as in drinking water supplies.

The mineral's fire retardent and insulating qualities are among its most valuable characteristics. During World War II, asbestos use jumped dramatically in the United States because the U. S. Navy determined that it was essential for shipboard fire protection. Until the mid-70s, asbestos-containing products were used extensively in building construction. Asbestos is currently used in hundreds of products including vehicle brakes, roof shingles, building panels, water and sewer pipes, floor tiles, specialized thermal and electrical insulation, and textiles.

Asbestos and Health

Asbestos can separate into microscopic fibers that can be inhaled. Numerous studies of exposures in workplace environments, such as shipyards or mining and manufacturing facilities, have linked prolonged or heavy exposures with three diseases: asbestosis, a fibrotic lung condition; lung cancer; and mesothelioma, a rare cancer of the lining of the lung or abdominal cavity. The studies have also found that the lung cancer risk from asbestos exposure is

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*This CSG Backgrounder was compiled by John F. Welch, President, Safe Buildings Alliance, Washington D.C. and Kevin J. Fay, Alcalde, Henderson and O'Bannon, Rosslyn, VA in cooperation with Jon Grand, Program Manager, CSG Environment and Natural Resources.