January 18, 1984

MEMORANDUM

To: HESS Committee members

From: Nancy Bennett, Committee staff

Re: Asbestos history/Alaska information

IN YOUR FOLDER:

A copy of SSHB 5, asbestos health hazard enabling legislation, and HB 57, the companion appropriation bill.

A section analysis of SSHB 5 and memorandum from DOTPF on the costs of inspecting state buildings for asbestos.

School district information on asbestos.

Relevant periodical and newspaper articles.

Information from the EPA/Alaska specific.

Alaska Health Project asbestos packet.

Packet of materials from the Association of General Contractors

ALASKA SCHOOLS INFORMATION:

The EPA has estimated from their Alaskan survey that only half of the school districts have inspected their facilities for asbestos, leaving approximately 220 buildings for review. By regulation, all schools in the USA were to be tested by June 30, 1983, parents and school boards were to be notified of the findings, school employees were to be instructed on minimization of health risks and records were to be maintained on testing and notification.

District needs in Alaska for asbestos abatement:

Kodiak	$ 1,138,507	
Petersburg	107,000	
Delta Greely	99,700	
Cordova	120,000	
Nenana	15,000	
Anchorage	11,000,000	(Phase II)
Skagway	25,000	
Kuspuk	5,296	
Mat-Su	105,959	
Juneau	300,000	(expended, estimate the possiblility of several million)

Ketchikan (unknown, estimates the possiblity of several million)

HISTORY

Following World War II, asbestos was widely recognized as a miracle fiber - it was an excellent insulator and would not burn - and was therefore widely used in construction during the "Baby Boom" period.

Asbestos was known to be dangerous long before Congressional hearings in the late 1970's, when the Johns-Manville Corporation admitted paying physicians to down-play the health hazards. Most early reported cases were among pipefitters and shipyard workers who faced heavy exposure in the workplace, but it was soon discovered that family members and people living in close proximity to factories were also affected. Asbestos is an inert material which cannot be removed from the body, and although the symptoms of asbestosis and mesothelioma often take decades to surface, the diseases are always fatal.

Congressional action in 1980 aimed at the removal of asbestos from schools was prompted by the increased susceptibility of children to asbestos because of their higher activity level and elevated respiration.

In 1984, the EPA began applying sanctions to individual school districts for non-compliance, rewrote their regulations for demolition and renovations with asbestos products and have more recently been receiving public pressure to take a more aggressive stance on asbestos in schools. Many speculate that the regulations were designed to bring pressure on states to fund asbestos removal by public notification, placing districts in the precarious position of raising concern about an issue they are unable to address financially. The $172 million authorized by the Asbestos Health Hazard Detection and Control Act of 1980 was never appropriated, although the federal government has made limited funds available in some schools on federal land.

A flurry of lawsuits filed in the last few years against manufacturers, contractors and school districts has pointed out confusion over the issue of liability. In addition, resource limitations of the EPA (they have .1 staff working on asbestos in Alaska) have created difficulty for rural schools districts to receive the type of assistance needed in this technical area

ASBESTOS TIME-LINE INFO FROM D.E.C.

DRAFT

1. EPA published rules 27 May, 1982 telling school districts (local education agencies) it is their responsibility to inspect, sample and have analyzed for asbestos, their school buildings; requiring that results be posted etc. by 27 May, 1983 (28 June, 1983?) Under TSCA this activity was required once.

2. EPA provided a 2-volume guidance document dated March 1979, to all schools in 1979 and again with the regulations in June 1982 to all school districts and private schools.

   a) These documents are available in the DEC library, and are mailed on request by EPA (100 more copies on order)

3. EPA provided two films/videos on and . These are available in the Juneau and Anchorage State Libraries. The EPA film can be copied (at least 25 copies have been mailed from Juneau and from Anchorage.)

4. EPA Region X has a staff of 3 and 1 asbestos co-ordinator, the Alaska Operations Office is also used as a resource for providing information etc.

   a) Jim Tozier, Department of Education is working with EPA on this
   b) ADEC does provide information - 2 weeks/year/office no technical knowledge via school sanitation or hazardous waste staff
   c) ADEC issued "Asbestos in Alaska" information sheet April 1983

5. EPA regulations do not require report of findings be submitted, only kept on file and posted if asbestos is present. No reinspection/sampling is required.

   a) EPA prepared inventory forms for use by the school and the district, and mailed them in August 1982 along with a reminder of the availablity of the guidance documents -- sent to districts and private schools.

   b) A number of school districts have "voluntarily" notified EPA of the results of their sampling program.

6. In September of 1982, EPA held workshops in Juneau, Anchorage and Fairbanks for school district representatives on the regulations.

7. In early June 1983, via Department of Education, EPA reminded school districts of the impending "deadline" and requested copies of the inspection/testing reports. (see 5b)

8. EPA plans to inspect (sample ?) representative schools in Juneau/Fairbanks/Anchorage (probably) for compliance.

9. Removal/Encapsulation/Elimination is not required nor was it funded via EPA -- US Department of Education did issue rules related to a grant/loan program -- 34 CFR 230 in 1981.

DRAFT

Points to be made

1. a) DEC has limited staffing the 1-2 weeks/year/office is about all we can tolerate in the information available mode.

   b) No staff is, or can afford to be, trained to provide technical advice about -

      sampling
      health risks] -- 1/2 year
      control

   c) No staff is available to do -

      training]
      sampling] -- 1/2 year

      Q/A]
      analyse] -- 1/2 year

      regulate]
      establish guidelines] -- 1/2 year

2. a) EPA's program and regulations under TSCA can not be delegated to the state, so the part related to schools would result in a double program.

   b) Perhaps Department of Labor and Department of Transportation/Public Facilities could regulate state/local buildings by reference to EPA's rules.

   c) Seems inappropriate for DEC to get involved in what is really an OSHA "world."

3. a) It is important to determine how the $17.0mm will be spent.

   b) It is necessary to evaluate results of testing, recommended "elimination" technique(s) set up and follow priority-setting standards, approve cost-effective projects, before awarding monies. Thus statutes should set up a regulatory scheme; if DEC writes regulations for C&RA to follow in evaluating project, prioritizing it and awarding funds etc., it puts us in an awkward position.

DRAFT

Recommendations:

a) Let EPA finish (and enforce) their inspection sampling of schools.

b) Have Department of Education require and obtain results required by EPA.

c) Instruct Department of Education to award (a single?) contract to evaluate and recommend appropriate "elimination" projects for each school (district) in which asbestos is found.

d) Establish regulations for applying/awarding grants.

e) Instruct DOT/PF (for state buildings) D of L (for local government buildings) to enforce EPA's regulations (inspect/sample) and prepare recommendations for correction.

f) Have Department of Education contract for programs to use (on Learn Alaska) to

   1. instruct school principals and local governments in their responsibilities
   2. give teachers/students facts about asbestos and health hazards

g) Have <u>one</u> agency responsible for evaluating all projects, awarding grants. Individual contract managers should be:

   1. School district supervisors
   2. DOT/PF
   3. Municipal offical

   i) Department of Labor would be most appropriate since the affected buildings are all "work places"
   ii) DOT/PF might be appropriate since they are experienced in construction projects
   iii) DEC might be appropriate since we already have a system for awarding grants to health-related projects (VSW & water/sewer)

h) Provide personnel to operate the program

   One - technical/health person
   One - construction techniques person
   One - grant auditor
   One - public information/field investigator

i) Make grant money "2-year." The program can not be started up and all these funds responsibly awarded in 12 months.

j) Institute a continuous monitoring program for facilities which do not elect to remove asbestos -- posting warnings on "solid asbestos" so future maintenance/renovation does not create health hazards.

Other copy

Sent to all school districts and parochial schools

Note: under TAP, in 1979 all schools were supposed to ...

Document 1 of 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 10 1982

THE ADMINISTRATOR

Dear School Administrator:

On May 27, 1982, the Environmental Protection Agency (EPA) published a rule in the Federal Register (47 FR 23360-23389) requiring all public and private elementary and secondary schools in the United States to identify friable asbestos-containing materials, maintain records, and notify employees of the location of the friable materials which contain asbestos. When friable asbestos-containing materials are found, schools must provide the employees with instructions on reducing exposure to asbestos, and notify the school's parent-teacher association.

Since 1979, EPA has operated a Technical Assistance Program (TAP) to help schools identify and correct potential hazards due to asbestos in schools. However, many schools did not respond to EPA's effort under the TAP. EPA is now requiring all schools to identify friable asbestos-containing materials and notify employees and parent-teacher organizations of their presence. These actions must be completed by June 28, 1983.

To assist schools in complying with the rule, we are enclosing a copy of the rule along with copies of "Asbestos-Containing Materials in School Buildings: A Guidance Document, Parts 1 and 2." Should you need a copy of any forms for this rule or other general information, please contact the Industry Assistance Office (TS-799), Office of Toxic Substances, Environmental Protection Agency, Rm. E-511, 401 M Streets, S.W., Washington, D.C. 20460. Phone: Toll free, 800-424-9065. In Washington, D.C., call 544-1404. Outside the Continental U.S., call Operator-202-554-1404. If you need technical assistance, please contact the appropriate Regional Asbestos Coordinator listed in the rule on page 23361.

Sincerely,

Douglas G. Bannerman
Acting Director,
Industry Assistance Office

Date

ROUTING AND TRANSMITTAL SLIP

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. ~~Tom Gunn~~		
2. Andy Christensen		
3.		
4.		
5.		

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

~~Attached~~ are schools in Alaska which were sent the schools Rule package

Also, attached is an address change.

RECEIVED
SEP 13 1982

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Dave Mayer EPA	
	Phone No.

5041-102

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

Dave Mayer, EPA, WASH. D.C.
Acting Team leader for Asbestos

SUPERINTENDENT
ADAK REGION SCHOOLS
FPO SEATTLE AK 96791

SUPERINTENDENT
BRISTOL BAY BOROUGH SCH D
NAKNEK AK 99633

SUPERINTENDENT
ALASKA GATEWAY SCH DIST
TOK AK 99760

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

3 of

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
99693

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

private schools for requests

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 the 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~~ 586-7619

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.
   Seattle, WN 98101

3200 Hospital Dr.
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 on 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 Pazara
Environmental Scientist

cc: J. Halterman
A. Smith

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

TOM BIBEAU RISK MANAGER ANCHORAGE SCHOOL DIST

BOB THORNTON MAINT DEPT. ANCHORAGE SCHOOL DIST.

BOB ELLISON MAINT & OPERATIONS DIR. KODIAK SCHOOL DIST

DAN R. SHERK PLANT MANAGER NORTH SLOPE BOROUGH SCH DIST

LUDWIG C. OSOWICK DEPUTY SUPERINTENDENT KENAI PENINSULA BORO

JAMES WM. ELLIOTT DOE (SEA) ANCHORAGE

PATRICK A. DAY DIR. FACILITIES VALDEZ CITY SCHOOLS VALDEZ

JAMES C. HUNSICKER DIR OPERATION & MAINTENANCE MAT SU SCHOOL DIST.

JAN D. AFFINITO, ASST CONTRACT ADMINISTRATOR, MATANUSKA-SUSITNA BOROUGH

STEVE ZORAKE AK DEPT. OF ENV. CONS. [illegible], AK

437 E ST, SUITE 200

ANCH., AK 99501

PLEASE SEND 10 COPIES OF MATERIAL LISTED ON 2 AUG. 1982 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 and RLM Lab
Tom Bibeau Risk Manager
Anchorage School Dist.
Pouch 6-614
Anchorage, AK 99503

Attendance to Christensen's presentation in Fairbanks 2/15/82.

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. Intl Airport Rd
Anch 99502

+ Harry Purdy
Alaska Gateway School District

* James Howard
Maint Foreman
FBKS No-Star Borough School Dist.
PO Box 1250 - 99201

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, Commissioner
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.

ADD 3-3-3-3

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.

-MORE-

Alaska Health Project

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

CORRECTION

THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

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

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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.

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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: 586-7519 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.

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

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, th 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 increa that would accrue to the position left, you do face the threat of economic discri nation 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

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.

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 valuable 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 the uses of asbestos depend on its heat and acid-resistant properti. For many purposes there is not yet a satisfactory substitute, and substitutes w 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

Asbestos Fiber Concentration Per Cubic Centimeter	Number of Asbestos Workers (per 10,000) Estimated To Get Asbestosis*
Levels	
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	History of Smoking: 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 ($(Fe\ Mg_7)Si_8C_{22}(OH)_2$)	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

Environmental Protection Agency
Toxic Substances
Washington, D.C. 20460
March 1979

Toxic Substances

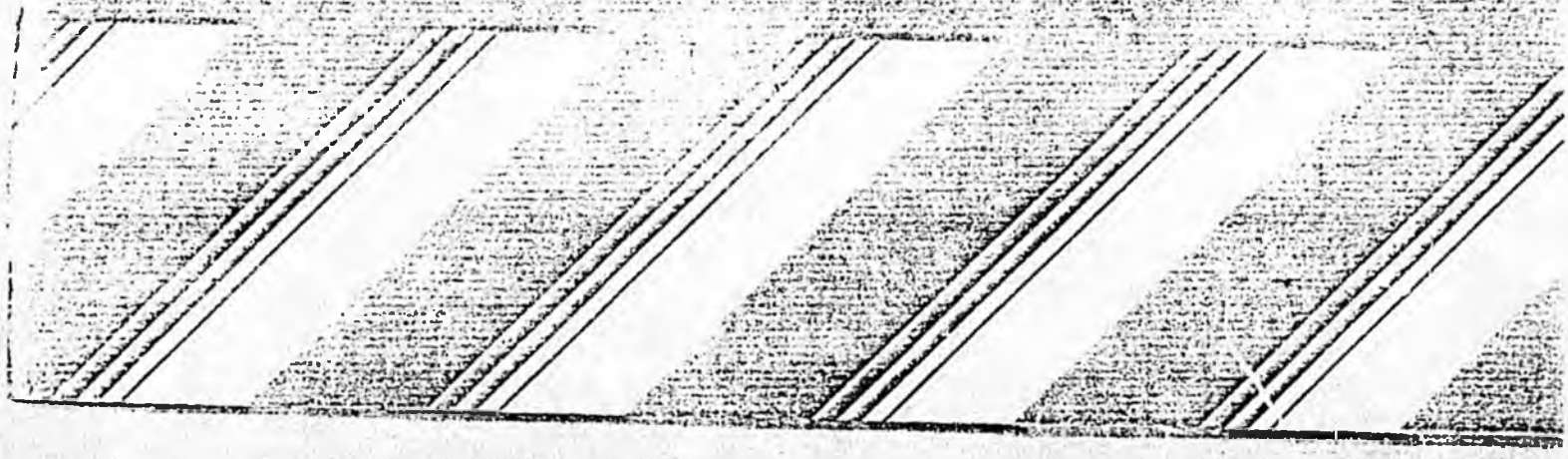
EPA

Asbestos-Containing Materials in School Buildings:

Part 1

A Guidance Document

Alaska Health Project
P.O. Box 1037 D.T.
Anchorage, Alaska 99510



Acknowledgements

We gratefully acknowledge the assistance of the many individuals who contributed their time and efforts to the preparation of this manual.

This manual embodies the comments and input of State and local government officials, environmental and special interest groups, industry, and interested private citizens as well as staff in EPA Headquarters and Regional Offices. The assistance of the Department of Health, Education, and Welfare (DHEW), the Occupational Safety and Health Administration, the Consumer Product Safety Commission, and the Department of Interior is also gratefully acknowledged.

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.

We are indebted to Dr. Robert N. Sawyer of the Yale University School of Medicine. In his capacity as the principal technical consultant to the project, Dr. Sawyer provided his invaluable assistance to the development of the manual. Dr. Sawyer was also responsible for generating interest and comments from individuals who have had experience in dealing with the asbestos-containing material problem.

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.

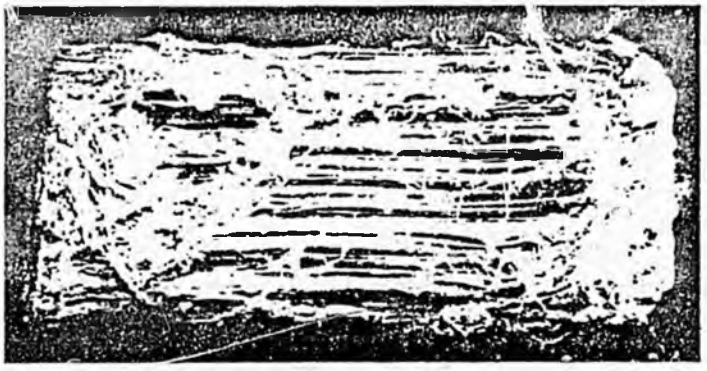
Asbestos also is used in automotive brake linings. In schools that have shops for automotive training, asbestos contamination can occur as a result of automotive brake servicing.

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

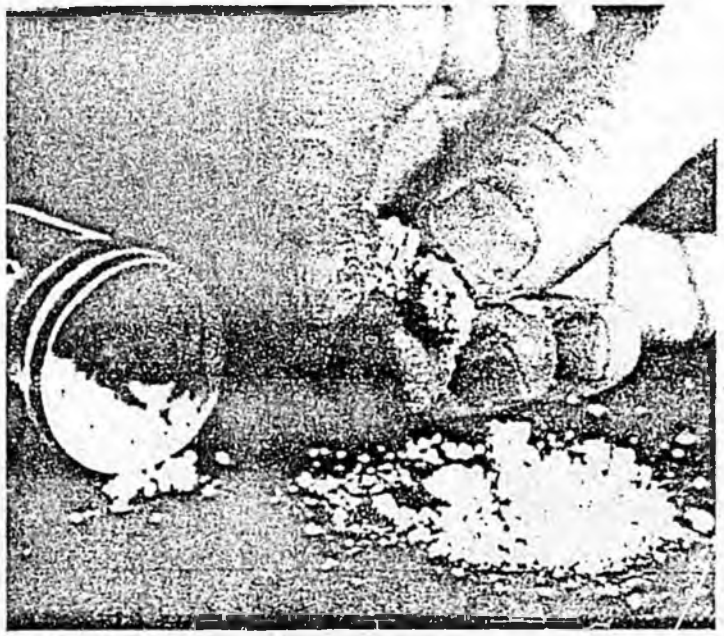
What asbestos-containing materials in school buildings can create an exposure problem?

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 to 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 added, 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.

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?

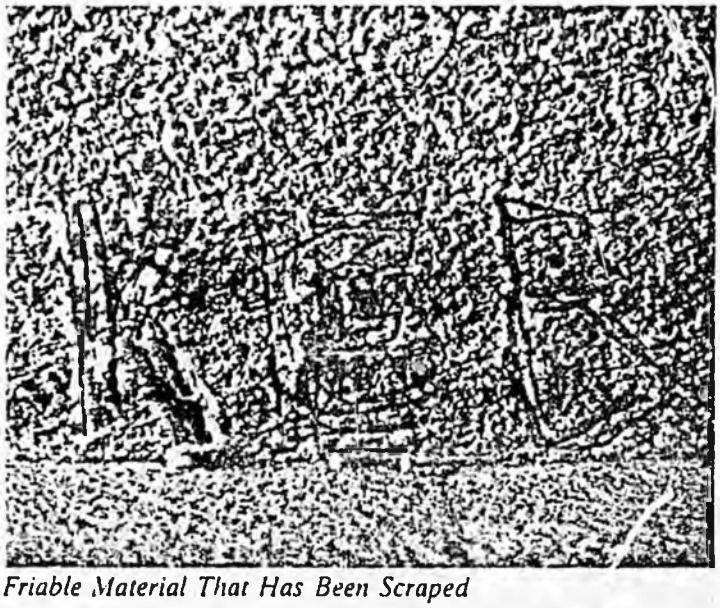
Many materials that look like friable asbestos material do not necessarily contain asbestos. Some friable material contains glass fibers, cellulose, or other non-asbestos fibers.

How are asbestos fibers released from friable asbestos material?

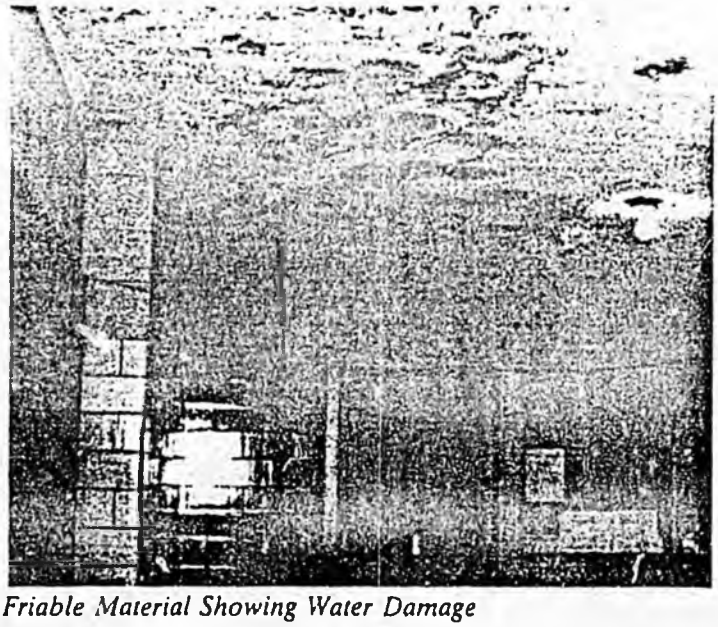
Fibers are released from friable material as a result of a breakdown in the integrity of the material due to deterioration or direct contact and damage.

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 That Has Been Scraped



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.

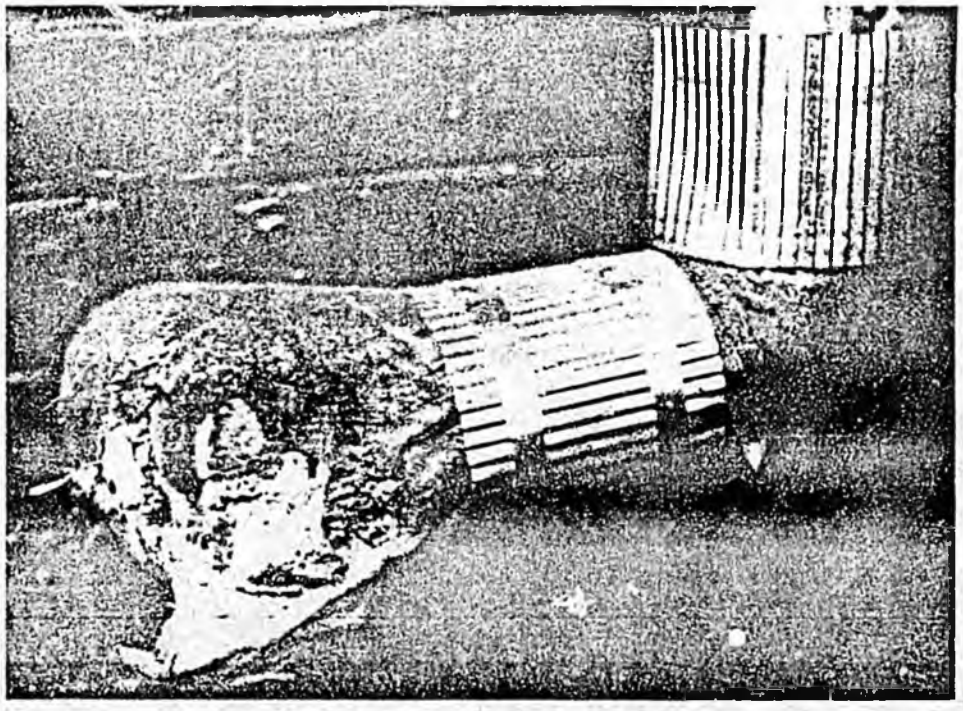
Is pipe covering and boiler lagging of concern?

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.

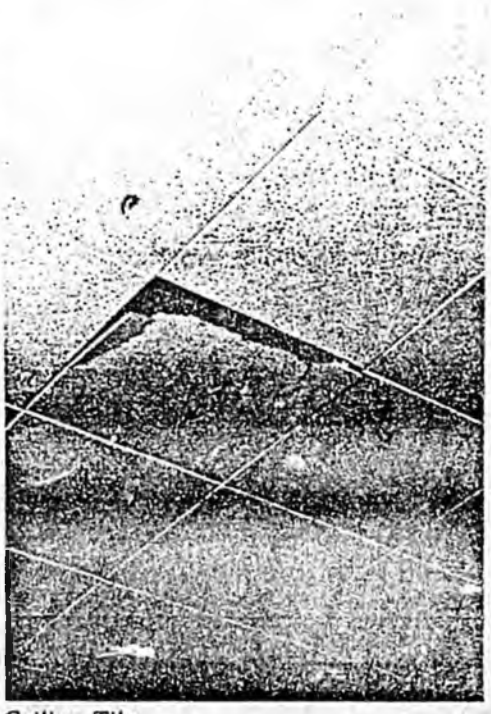
Pipe covering and boiler lagging should be routinely inspected. If the insulation material is exposed, retaping or covering the damaged area will prevent asbestos fiber release.

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

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   a. Aluminum
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4. Acid Resistant Materials
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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

TO: SCHNEIDER 1/25/85

The following information was obtained from the Georgia Chapter (AGC) in Atlanta Georgia - their office is 2 blocks away form Georgia Tech. and Janet at Alaska Airlines:

Georgia Tech. course	$ 400.00	400.00
Air Fare Juneau/Atlanta/Juneau	1361.00	1361.00
Hotel Hilton $85 x 4 nights	340.00	
Hotel Carlton $102 x 4 nights		408.00
Taxi $20 x 2 trips	40.00	40.00
Breakfast $8.00 x 4	32.00	32.00
Lunch $8.00 x 4	32.00	32.00
Dinner $25.00 x 4	100.00	100.00
	$2205.00	2263.00

Georgia Tech course	400.00	400.00
Air Fare Anchorage/Atlanta/Anchorage	1356.00	1356.00
Hotel Hilton $85 x 4 nights	340.00	
Hotel Carlton $102 x 4 nights		408.00
Taxi $20 x 2 trips	40.00	40.00
Breakfast $8.00 x 4	32.00	32.00
Lunch $8.00 x 4	32.00	32.00
Dinner $25.00 x 4	100.00	100.00
	$2200.00	2258.00

Georgia Tech course	400.00	400.00
Air Fare Fairbanks/Atlanta/Fairbanks	1554.00	1554.00
Hotel Hilton $85 x 4 nights	340.00	
Hotel Carlton $102 x 4 nights		408.00
Taxi $20 x 2 trips	40.00	40.00
Breakfast $8.00 x 4	32.00	32.00
Lunch $8.00 x 4	32.00	32.00
Dinner $25.00 x 4	100.00	100.00
	$2398.00	2456.00

Bethel/Anchorage/Bethel	356.00	356.00
Anchorage Total From Above	2200.00	2263.00
	$2556.00	2619.00

Kotzebue/Anchorage/Kotzebue	426.00	426.00
Anchorage Total From Above	2200.00	2263.00
	$2626.00	2689.00

M E M O R A N D U M

SUBJECT: Comparative sectional analysis of CSSSHB 5 (L&C)(2/11/85 draft) and CSSSHB 5 (HESS)

TO: Representative Mike Davis
Vice-Chairman, House Labor and Commerce Committee

FROM: Edward H. Hein
Legislative Counsel

The following is an explanation of the changes to CSSSHB 5 (HESS) that appear in draft CSSSHB 5 (L&C) (page and line references are to the HESS Committee Substitute, unless specified otherwise):

Page 1, lines 8-9: the bill title has been changed to reflect the broadening of the asbestos worker certification program.

Section 1 of both bills are identical.

Section 2

Page 2, line 2: the title of new Chapter 28 has been shortened and the chapter itself has been broken into three articles. Article 1 encompasses the asbestos health hazard abatement program; Article 2 covers the worker certification program; Article 3 is for definitions that apply to both programs. The certification program was separated from the abatement program to make clear that the certifications program's coverage is different from and broader than the abatement program.

Page 2, lines 6 and 15; page 3, line 3: the word "eliminate" has been changed to "abate".

Page 2, lines 25 - 26: new language has been inserted requiring that guidelines of DOL conform with federal EPA asbestos regulations.

Page 3, lines 7 - 10: a new paragraph has been inserted directing the Department of Labor to establish classifications of asbestos hazards and set priorities for abatement work; these priorities also serve as the basis for distribution of grants by the Department of Education at page 4, lines 6 - 9.

Page 5, lines 3 -4: new language has been inserted requiring that inspections of schools contracted by local school officials be supervised by DOL.

Page 5, line 21 - page 6, line 24: the certification program for asbestos workers has been expanded to include all asbestos work in the state, not just work done in schools under the abatement program.

Page 6, line 29 - page 7, line 2: the definition of "asbestos health hazard" has been changed.

Page 7, lines 5 - 6: the applicability of the Act has been rewritten to reflect the separation of the certification program from the abatement program.