

FILE NAME: Flintkote (FLK)

DATE: 1984

DOC#: FLK080 & 081

DOCUMENT DESCRIPTION: Legal - Exhibits from Deposition of Arthur R. Hooker

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF ALAMEDA

In Re: Sterns,
Brown & Finney Consolidated
For Discovery Related Shipyard
and Applicator Asbestos Cases.

No. 573686-9

Property of Ness, Molloy
& Finney, P.C.
San Francisco, CA

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE CITY AND COUNTY OF SAN FRANCISCO

In Re: Sterns,
Brown & Finney Consolidated
For Discovery Related
Shipyard and Applicator
Asbestos Cases.

No. 805555

DEPOSITION OF ARTHUR R. HOOKER

April 12, 1984

April 13, 1984

PATRICIA CALLAHAN & ASSOCIATES
CERTIFIED SHORTHAND REPORTERS

COPY

REPORTED BY DEBORAH WONG BROOKS
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EXHIBITS

FVAM 60193335
FLD 00003022

DESCRIPTION OF PACKAGING
OF FLINTKOTE ASBESTOS PRODUCTS

Liquid Products: All liquid products are packaged in metal cans ranging in size from 1 to 55 gallons. Each can has a label setting forth the current Flintkote trademark, the name of the product, a general description of the product, direction for use and a limited warranty. This general packaging format has always been used for liquid products.

Floor Tile: All floor tiles are packaged in cardboard cartons. Printed directly on each box is general information including, the Flintkote trademark, the name of the product, a general description of the product, directions for use and a limited warranty. This general packaging format has always been used for floor tile.

Asbestos Cement Pipe: This product line was closed down in 1977. The product was not packaged but rather shipped by pallet. The product contained no written material.

Asbestos Shingles and Board: These products were last manufactured during the early 70's. The products were packaged in paper wrapping. Printed directly on the wrapping was general information including the Flintkote trademark, the name of the product, a general description of the product, directions for use and a limited warranty.

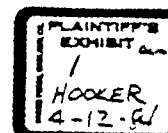
Orangeburg Fibre Pipe: This product was last manufactured in 1972. The product was not packaged. The Flintkote trademark was pressed into the pipe. The product contained no other written material.

Van Packer Chinnev: This product was last manufactured in 1971. FLINTKOTE does not keep a historical file of product packages or labels and has no independent knowledge as to how this product was packaged or labeled. (The Van Packer Co. was sold in 1971.)

Ready-Mix Joint Compounds: This product was manufactured by independent companies and sold by FLINTKOTE during the period 1955 through 1976. It was sold in cans ranging in size from 1 to 5 gallons. When

EXHIBIT D

3/30/83



relabeled by FLINTKOTE, the label contained general information including the Flintkote trademark, the name of the product, a general description of the product, directions for use and a limited warranty. The FLINTKOTE Company does not maintain a file of packages/labels of products bought from independent manufacturers and, at this time, has no independent information as to how this particular product was originally packaged.

Powder Joint Treatment Compound: This product was manufactured by independent companies and sold without repackaging/relabeling. It was last sold by FLINTKOTE in 1975 or 76. FLINTKOTE does not maintain a historical file of packages or labels on products brought from independent manufacturers and, at this time, has no independent knowledge as to how this product was packaged.

Spray Texture: This product was manufactured by independent companies and private labeled by FLINTKOTE. It was last sold in approximately 1976. FLINTKOTE does not maintain a historical file of packages or labels and, at this time, has no independent knowledge as to how this product was packaged or labeled.

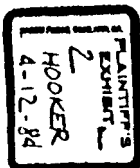
LEHIGH ASBESTOS INDUSTRIAL PRODUCTS

Product Name	Synonym Name	Period of Manufacture	Quantity	Description
Acid Proof Cement	Van Packer Jr. Cement	Approximately 1954-70	14.50	Silicate of soda joint cement for Van Packer chimney sections
Acrylic Pavement Coating		1970-1977	30	Pigmented acrylic latex coating for streets and blacktop driveways
**All-Weather Mastic	See Rain Patch	1956-1970 (12R,ND) 1956-1981 (CH) 1956-1982 (V)		Plastic cement treated to bond to damp surfaces
**Aluminum Roof Coating (810-19)		1969-1970 (12R,ND) 1969-1981 (CH) 1969-1982 (V)	10-130	Aluminum pigmented reflective roof coating
A-G's Coating		1947-70	150	Spray grade R.R. car cement
Black Joint Cement	Standfast Cement	1946-69's	20-250	Knife or gun grade joint sealing compound
R.R. Car Cements		These car cements were made from the late 1940's and discontinued prior to 1960 at E. Ruth, N.O. and Croy Mts., depending on shipping destination		All were spray to trowel grade metal protective coatings used by railroad car builders or repair shops
81 Car Cement			16-170	
81 Car Cement-Pullman			130	
81 Car Cement-No Oil			100	
81 Car Cement-20 Oil			170	
82 Car Cement-10 Oil			190	
84 Car Cement			160	
86 Car Cement			+150	
1263 Car Cement			160	
1407 Car Cement			+150	
So. Railway Spl. 897				
Car Cement (Spray)			130	
(Trowel)				
NYC R.R. 11223 F-1			22-290	
Car Cement				
" " " F-2			15-180	
Car Cement				
" " " F-3			230	
Car Cement				
" " " F-5			350	
Car Cement				
			+150	

* SEE PAGE 7 FOR KEY TO MANUFACTURING LOCATIONS

NOTE: + = Exceeds

7/27/83



<u>Product Name</u>	<u>Synonyms Name</u>	<u>Period of Manufacture</u>	<u>S. Addition</u>	<u>Description</u>
Wm. R.R. 81223 F-1 (101 oil) Car Cement " " " F-2 (101 oil) Car Cement IC Car Cement OC L & M Car Cement Missouri-Pacific Car Cement		These car cements were made from the late 1940's and discontinued prior to 1968 at E. Wash, N.O. and Clyn Mo., depending on shipping destination	14-190 230 13-150 160	All were spray to trowel grade metal protective coatings used by railroad car builders or repair shops
Colorcoat	Unimastic 152	Mid-late 1960's to 1975	60	Latex coating for protection of thermal insulation
Corkote	Spl. Barkul Promix 85	1950-60	10	Sand filled asphalt emulsion for protecting cork insulation in freezers
C-13-A (100-14)		Late 1940's-1970 (FR,HO) Late 1940's-1981 (CH) 1940's-1979 (V)	120	Trowel grade emulsion weather protection for insulation (asphalt base)
C-13-NH		1962-1970	90	Freeze resistant winter grade C-13-A
** C-13-C4 (800-13)	Static Fibrated	1940-1970 (FR,NH) 1940-1981 (CH) 1940-1982 (V)	30	Brush or spray grade asphalt emulsion roof coating
C-13-1A		1947-1965	3.50	Light consistency C-13-A
C-13-SA		1954-1965	20	" " " " "
C-19 (110-14)	8213 Underlady Coating	1954-1975 (FR,HO) 1954-1981 (V) 1954-1981 (CH)	20-250	Brush or spray grade asphalt cutback insulation protective coating
C-20		1965-1967	19.90	Asphalt protective coating-Spl.run-short lived
Decoralt Coatings		Late 1950's to 1970	4.5-6.00	These are pigment and filled latex coatings used primarily for surfacing terrace courts
Decoralt (920-04)	Decorcolor (920-04)			
Decoralt Binder (920-05)				
Decoralt (920-06)				
Decorcolor 10' (920-27)				
Decoralt (920-30)				

<u>Product Name</u>	<u>Synonymous Name</u>	<u>Period of Manufacture</u>	<u>% Adhesive</u>	<u>Description</u>
Roempanel Coating (R30-11)		1970-76	1%	A resin based coating for use over urethane foam insulation
** Fiber Roof Coating (RTC)	Roof Coating (Fiberglass) (R10-09)	1945-1978 (FN,M) 1945-1981 (RN) 1945-1982 (V)	6-9%	Spray or brush grade asphalt cutback roof coating
** Fibrous Cement	Fibrex I	Early 1940's-1978 (FN,M) Early 1940's-1981 (RN) early 1940's-1982 (V)	10%	Asphalt cutback adhesive for cementing roofing base sheets
Filler Coat (900-20)	Termin Coat Resurfacer	1964-1978 (FN,M) 1964-1981 (RN) 1964-1982 (V)	6%	Sand filled levelling and smoothing compound for pavements
Filler Coat Binder (900-15)	(See Thermakote 100-15)			Heavy binder for mixing with sand in field to make filler coat compound
Filtrack		1971-1970	6%	Sand filled resin coating-mix to surfaces non-slip
FT-100 (110-25)	Unimastic 150	Early 1960's-1978 (RN)	7.5%	Pigment resin coating for insulation-fire retardant
FT-200 (110-26)		1966 to 1970	Approx. 15%	Fire retardant asphalt cutback-mix experimentally at New Orleans but then bought for resale. Protection for insulation.
FT-300 (120-14)		Mid 1960's-1978 (RN)	6%	Pigmented latex coating for insulation-fire retardant
(2'-8 Tile Cement	R-14-C	Early 1940's-1978 (FN,M) Early 1940's-1981 (RN) early 1940's-1982 (V)	10%	Floor tile cement
Hydromatic Mastic	710-21	1973-1982 (V) West Coast only	15.5%	Seal-Plastic vapor barrier coating
** Levelkote (800-39)	See Static Levelkote		2.5%	Brush or spray grade asphalt emulsion roof coating
Moniform C	see Resalt			Spray grade asphalt cutback roof coating for moniform system
(1-1)-C4		1960-61	3%	Brush or spray grade asphalt emulsion roof coating
HTN 300		late 1960's-1975 (RN)	3%	A non-fire retardant version of FT-100-utility coating uses

<u>Product Name</u>	<u>Synonym(s) Name</u>	<u>Period of Manufacture</u>	<u>% Amalgam</u>	<u>Description</u>
10-Static	Synonym(s) Name Synonym(s)	1954-1970 (R, M) 1954-1981 (O)	61	A spray grade of C-13-C4 asphalt emulsion roof coating
814 Emulsion		1954-7 - Formulated - Never Produced	61	Asphalt emulsion-usage unknown
816 Underbody Prot. Ctg.		1954-Mid 1960's	90	Asphalt emulsion auto underbody protective coating
854 R.C. Insulation Ctg.		1954-1970	40	High cork content 85% insulation coating
854 Insulation Coating		1954-1970	40	Cork, vermiculite, charcoal filled asphalt emulsion
869 Insulation Coating		1940's-1970	110	Cork filled asphalt cutback insulation coating
8701 Insulation Coating		1950-1960	120	Asphalt Cutback-usage unknown
8213 Underbody Coating	See C-13	1950's-1960	140	Asphalt cutback-usage unknown
8222 Underbody Coating		1950-1975 (O, M)	8.5-170	Military spec. underbody coating asphalt cutback
8227 Underbody Coating		1959-1965	100	This is a slightly thinner version of C-13-A for a pvt. label customer
812	See C-13-A		100	Cork filled asphalt cutback-for contamination control
8229 Anti-Rust Ctg.		1947-7 Miscellaneous (R, M, O) 1947-1970 (O)	120	Asphalt cutback-usage unknown
8230 Spray-On Undercoat		1950-1960	4.51	Automotive sound deadener-asphalt cutback
8242		1950's-1965	131	Asphalt cutback-usage unknown
8245		1950's-1974 (O, M, NO)	101	Travel grade asphalt cutback for underbody coating and waterproofing
8247		1950's-1960	61	Asphalt cutback-usage unknown

Product Name

Synonyms (Code)

0252 Bimbrmal

0255

0268 Export Box Sealer

0276

0349-1

0390

0310 Windshield Sealer

0630-11 Coating

0632 Coating

02004 Adhesive

0729 (FDR Type)

0731 (FDR Type)

0732 (FDR Type)

0777

0778

Plastic Armor Putty

** Plastic Cement (010-21)

1940's-1960	161	Sprayable asphalt cutback-emulsion, protection-granule emb. ment
1950-1960	221	Asphalt cutback-usages unknown
1951-1960	91	Protective coating for export crates-asphalt cutback
1950-1960 - Formulated? If manufactured	5-101	Asphalt cutback-usages unknown
1950-1960's	71	Redderized asphalt cutback for automotive sealant
1950-1960's	71	Redderized asphalt cutback for automotive sealant
1950-1960	151	Redderized asphalt cutback sealer for auto windshields
1956-1965		
1956-1965	11	A fire retardant asphalt emulsion for R.R. car builders
1940's-1966	151	Silicate of soda high temperature insulation adhesive
Mid 1940's-1950's	131	Redder cement
Mid 1940's-1950's	121	Redder cement
Mid 1940's-1950's	121	Redder cement
Mid 1940's-1950's	141	Redder cement
Mid 1940's-1950's	161	Redder cement
Mid 1940's-1950's	201	Sealer and caulk for plastic armor-asphalt cutback
Early 1940's-1970 (17,18) Early 1940's-1981 (11) Early 1940's-1982 (1)	16-191	Heavy trowel asphalt cutback for (and floodings) and repairs

<u>Purchase Item</u>	<u>Synonymous Item</u>	<u>Period of Manufacture</u>
Plastic Revolution Ctg.		1940's-1960
** Roof Coating F.urat J	See Filler Roof Ctg.	
Ruin Patch (810-25)	All Weather Plastic	1969-1978 (IR,NI) 1969-1981 (CI) 1969-1982 (V)
Rumit Roof Coating		1950-1978 (IR,NO) 1950-1981 (CI)
** Runglas Coating		1969-1978 (ER,IO) 1969-1981 (CI)
Pin Covert. Plastic Blinder		Mid 1940's-1950's
Railroad Car Cement	See Car Cement R.R.	
R-14-C	See CR-8	
R-14-D		1946-1963
Sever Joint CRD (293)		1949-1960
Sil. Sanded Premix 85	See Cork Plastic	
Spraykote	See Nu Static	
** Static Asphalt Filtered	See C-13-C4	
** Static Levelkote		1958-1978 (IR,NO) 1958-1981 (CI)
Stovifant Cement	See Black Joint Cement	1954-1963
Stik-Tak Cement		1950-1963
Twin Coat Resurfacer	See Filler Coat (900-20)	

8 Adhesives

Description

- 260 Asphalt cutback waterproofing compound
- 12-190 Plastic cement treated to bond to wet surfaces
- 12-150 Brush or spray grade asphalt cutback roof coating
- 2.50 Glass filled asphalt emulsion roof coating
- 9.50 Asphalt cutback adhesive for roll roofing
- 110 Trowel grade floor tire cement asphalt cutback
- 140 Heavy trowel grade asphalt cutback for sealing sewer pipe joints
- 2.50 Asphalt emulsion for low slope roofs
- 210
- 130 Asphalt cutback adhesive for roof slurry tala

Product (Row)	Synonym(s) (Row)	Period of Manufacture	E. Adams Co.	Description
Thermathane (100-15)	Filler Coat Binder	Later 1940's-1978 (12,104) Later 1940's-1981 (100) Later 1940's-1982 (10)	14-171	Heavy travel grade asphalt emulsion-modified asphalt coating
** Travel Mastic		1961-1978 (12,104) 1961-1981 (100)	22-258	Travel grade asphalt cutback water-proofing compound
Thiomatic 150	See FR-100			
Thiomatic 152	See Colorcoat			
Van Parker Jr. Cement	See Acid Proof Cement			
Vapor Seal	8710-14 (12,105)	1951-1978 (10)	51	Semi-Mastic asphalt coating for moisture vapor barrier
Vishall Flashing Cement	See Plastic Cement			Travel grade asphalt cutback for roof flashings
** M-J-Kin Cement East only		1940's-1978 (12,104) 1940's-1982 (10) 1940's-1981 (100)	51	High strength asphalt cutback adhesive for roof membranes
Skykote		1974-1982 16-1	21	Pigmented asphalt emulsion (colored roofing coating)
Super Stakool White		1948-1977 16-1	61	Cement type dry mix roofing coating

The products denoted by a double asterisk (**) on pages 1 through 7 of this exhibit are products presently manufactured by others but sold by Flintkote.

KEY TO MANUFACTURING LOCATIONS

(1) = (11000) INDIANAS, IL
 (12) = 12000 INDIANAS, IN
 (10) = 10000 INDIANAS, IN
 V = VANDERBILT, VA

ADDITIONAL ASBESTOS PRODUCTS ONCE MANUFACTURED BY FLINTKOTE

<u>Product</u>	<u>Period of Manufacture</u>	<u>Approximate Asbestos Content</u>
Asbestos Cement Board	1950-1970	10-15%
Asbestos Cement Pipe	1962-1977	16%
Asbestos Cement Siding & Roofing Shingles	Approx. early 1950s to early 1970s	10-15%
Asphalt Saturated Asbestos Felt (Built-up Roofing)	Approx. 1956-1976	65%
Flooring-Asbestos Vinyl Floor Tile	Approx. 1945-1980	8-14%
Asbestos Pipe	1959-1972	1-1/2%
Asbestos Packer Chimneys	1964-1971	
(a) Commercial chimneys for those products that used asbestos fiber - (only jackets which are a small part of overall product)		22%
(b) Residential chimneys		20%

Flintkote purchased the asbestos felt from other manufacturers and merely saturated it with asphalt in their own facilities.

PRODUCTS MANUFACTURED BY OTHERS
BUT SOLD BY FLINTKOTE

	<u>Period of Sale</u>	
Joint Treatment Compound	1955-1976	5%
Spray Texture Paint	1974-1976	4-5%
Ceiling Tile (Mid West only)	1966-1974	2%
Asphalt Saturated Asbestos Felt (Built-up Roofing)	Intermittently from approx. 1941-1982	65%
Asbestos Cement Shingles	1960-Mid 1970s	10-15%
Super Stakool White (West Coast only)	1948-1977	6%

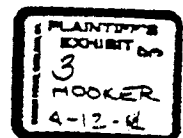
11/3

Summary of Fiber Used by
The Flintkote Company
(1961-1971 inclusive)*

<u>Producers</u>	<u>Bags of 100#</u>
Canadian Johns-Manville	4,400
Asbestos Corporation Ltd.	10,061
National Asbestos Mines Ltd.	15,200
Carey Canadian Mine	4,800
Asbestos Corporation Limited	4,000
National Asbestos Mines Ltd.	3,000
Asbestos Corporation Limited	7,140
Asbestos Corporation Limited	11,600
Canadian Johns-Manville	3,316
Carey Canadian	3,000
National Asbestos	2,000
Ruberoid Co.	1,000
Asbestos Corporation Limited	75,640
Canadian Johns-Manville	9,504
National Carey	31,060
Ruberoid	1,000
Asbestos Corporation Limited	105,250
Canadian Johns-Manville	91,455
Carey Canadian Mines	94,260
National Asbestos	4,600
Asbestos Corporation Limited	57,300
Canadian Johns-Manville	109,006
Carey Canadian Mines	116,320
Asbestos Corporation Limited	78,260
Canadian Johns-Manville	113,060
Carey Canadian Mines	107,030
National	8,000
Bell Asbestos	2,400
Asbestos Corporation Limited	128,590
Canadian Johns-Manville	109,332
Carey	131,880
National	5,160
Bell Asbestos	34,800

are no records from 1964.

EXHIBIT B



<u>Year</u>	<u>Producers</u>	<u>Bags of 100#</u>
<u>1970</u>	Asbestos Corporation Limited	68,925
	Canadian Johns-Manville	142,506
	Carey	113,400
	National	15,600
	Bell Asbestos	84,000
<u>1971</u>	Asbestos Corporation Limited	77,980
	Canadian Johns-Manville	203,750
	Carey	117,720
	Bell Asbestos	76,800
	?	18,960

2-4

**CONTAINS
ASBESTOS
DUST**

PLAINTIFF'S
EXHIBIT
4
HOOKER
2-12-82

Asbestos Caution Label

#5

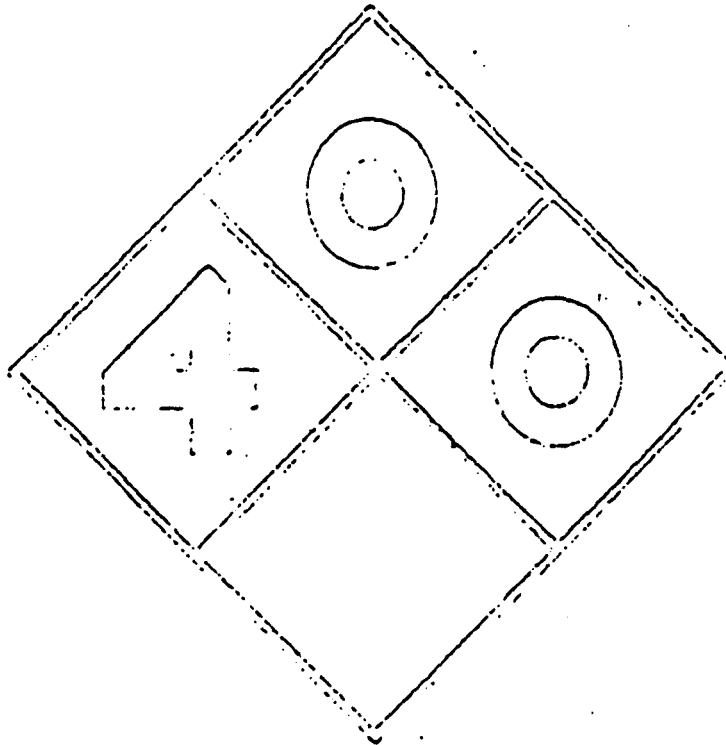
CAUTION

CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
BREATHING ASBESTOS DUST
MAY CAUSE
SERIOUS BODILY HARM

When dry sanding this product wear eye protection and a respirator which is U.S. Bureau of Mines approved for toxic, nuisance and pneumoconiosis-producing dusts. Wet sanding or sponging is recommended where practical.

ult 6

ASBESTOS



HARMFUL: May Cause Delayed Lung Injury
(Asbestosis, Lung Cancer).

DO NOT BREATHE DUST

Use only with adequate ventilation and
approved respiratory protective devices.

CAUTION

CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
BREATHING ASBESTOS DUST MAY CAUSE
SERIOUS BODILY HARM

PLAINTIFF'S
EXHIBIT DO
7
HOOKER
4-12-84

ASBESTOS FIBERS PRESENT
CANCER HAZARD EXISTS
DO NOT RELEASE
CONTENTS OF THIS BAG

#44
Box 12 NI-1000
Thru NI-1005
IF NI-1015.14
(2 copies)

PLAINTIFF'S
EXHIBIT
8
HOOKER
4-12-84

248

11/19

Mr. J. R. Adams
East Rutherford

Proposed Labels - "RELIANCE" Brand

J. E. Fogarty
White Plains

November 17, 1971

Handwritten:
Bill Ma
Propping
in
labelling

I have reviewed the labels which you forwarded with your note dated November 15, 1971.

The labels for Trowel Plastic Cement and Ply Adhesive (Nos. 250 and 211) may be printed as submitted.

With regard to "Asphalt Roof Coating", you should delete the reference to "Asphalt" in the statement identifying hazardous substances in the contents. In addition, you should substitute the phrase "Petroleum Distillates" in place of "Petroleum Mineral Spirits".

Finally, with regard to Roof Coating "Fibred", you should delete the words "Asphalt" and "Asbestos Fiber" from the statement identifying hazardous substances.

When the above changes have been made you may print these labels as required without further changes.

Joseph E. Fogarty

JEF:am

bcc: Mr. G. G. Curry

PLANTIFF'S
EXHIBIT
9
HOOKER
4-12-84

1-10

CH H T S
7 T
Hook

THE FLINTKOTE COMPANY
INTER-OFFICE CORRESPONDENCE

TO: Mr. E. A. Opila

SUBJECT: Asbestos Fibre

FROM: A. R. Hooker, Jr.

DATE: April 21, 1972

I refer to your letter of April 17th. concerning shipments from Carey as well as markings on bags of asbestos and the related problems of complying with OSHA regulations.

By copy of this correspondence, I ask that our Thetford Mines office discuss an improved method of loading and bracing railroad cars shipped by Carey. We should be sure that the most durable package offered by Carey is being used (see my letter of March 27, 1972).

You have asked, "Will asbestos suppliers mark container with cross bones indicating hazard item for OSHA?". Ed, I am enclosing a copy of a proposed labeling requirement under OSHA regulations. This applies to asbestos products manufactured in the United States. It is possible that Canada will also promulgate the same or similar government standards. It will depend upon what actually happens in the U.S.A.

Most Quebec asbestos producers are putting a label on all bags that reads substantially as follows:

CAUTION

This bag contains chrysotile asbestos fibre. Persons exposed to this material should use adequate protective devices as inhalation of this material over long periods may be harmful.

The above label is actually used by Flintkote.

It is possible for any Flintkote plant to specify special markings. I would suggest that we limit any labeling of this type to what is actually required by OSHA or other Government authorities.

ANH:jo

cc: Messrs. J. Barrios, M. C. Carpenter, M. L. Johnson, W. Knorr, J. D. Moran, D. Reirick, R. W. Spinkman, J. Szal



inches). Additional medical requirement components include a history to describe smoking habits and details on past exposure to asbestos and other dusts and to determine presence or absence of pulmonary, cardiovascular, and gastrointestinal symptoms, and a physical examination, with special attention to pulmonary rates, clubbing of fingers, and other signs related to cardiopulmonary systems.

Chest roentgenograms and pulmonary function tests will be performed at the employer's expense, at least every 2 years, on all employees exposed to asbestos. These tests will be made annually to individuals, (1) who have a history of 10 or more years of employment involving exposure to asbestos, or (2) who show roentgenographic findings (such as small opacities, pleural plaques, pleural thickening, pleural calcification) which suggest or indicate pneumoconiosis or other reactions to asbestos, or (3) who have changes in pulmonary function which indicate restrictive or obstructive lung disease.

Preplacement medical examinations and medical examinations on the termination of employment of asbestos-exposed workers are also required.

Section 3—Labeling

(a) A warning label for asbestos as shown in Figure 1 shall be used.

(b) Numerical designations indicate the following:

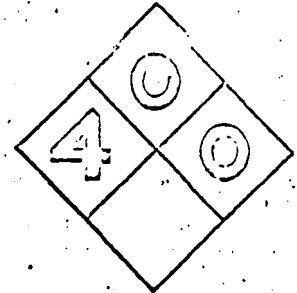
(i) 4—Health Hazard (color code, blue). Inhalation may cause asbestosis, pleural or peritoneal mesothelioma, or lung cancer.

(ii) 0—Fire Hazard (color code, red). Asbestos is non-flammable and has negligible vapor pressure, volatility, flash point, and explosive limits.

(c) The details of the numerical hazard rating system are found in Appendix II [not reproduced].

Where procedures will not be required for any and occasional short-term exposures in excess of the environmental standard. However, the use of respirator equipment as indicated in this Section (4) will be required under conditions in excess of the standard.

ASBESTOS



HARMFUL: May Cause Delayed Lung Injury

(Asbestosis, Lung Cancer).

DO NOT BREATHE DUST

Use only with adequate ventilation and approved respiratory protective devices.

Section 4—Personal Protective Equipment and Clothing

This section shall apply whenever a variance from the standard set in Section 1 is granted under provisions of the Occupational Safety and Health Act.* Use of respirators can be decided on the basis of time-weighted average or peak concentration. When the limits of exposure to asbestos dust prescribed in paragraph (a) of Section 1 cannot be met by limiting the concentration of asbestos dust in the work environment, an employer must utilize as provided in subsections (a) and (b) of this Section a program of respiratory protection and furnishing of protective clothing to effect the required protection of every worker exposed.

(a) Respiratory Protection

(i) For the purpose of determining the class of respirator to be used, the employer shall measure the atmospheric concentration of airborne asbestos in the workplace when the

over, the use of respirator equipment as indicated in this Section (4) will be required under conditions in excess of the standard.

*Threat of "Black
Lung" is
100% disabling.*

11

THE FLINTKOTE COMPANY
INTER-OFFICE CORRESPONDENCE

TO: Mr. D. Poirier SUBJECT: Asbestos Warning Label

FROM: A. R. Hooker, Jr. DATE: November 6, 1969

It is desired that a "warning label" be printed on bags of chrysotile asbestos fibre shipped by this Company to Canadian and continental U.S.A. destinations.

Effective immediately, please instruct your supplier of bags ordered for Canada and U.S.A. to print the following label on each bag:

CAUTION
This bag contains chrysotile asbestos fibre. Persons exposed to this material should use adequate protective devices as inhalation of this material over long periods may be harmful.

There will be no announcement of this action.

ARH

ARH:jo

cc: Messrs. J. D. Moran
M. C. Carpenter
G. G. Curry
J. A. Main
H. E. Beard
H. P. Heubner
W. N. Knorr ✓

PLAINTIFF'S
EXHIBITS
11
HOOKER
4-12-84

AMFORD

J. Graham
Shannon
M. Curtis
H. Parke, Jr.
T. George
Waddell
M. Macleod

OCHELLE PARK

V. Pane
Hadigian
E. Beard
L. Tomaselli
Weiss
D. Shipley
K. Jordan

RUTHERFORD

Murphy
L. Hauser
T. Davidoff
L. Murray
C. Harkness
T. Upshaw
H. Mortonson
F. Carl
K. E. Ruskin

F. Veronsky
P. S. Tanner

CHICAGO HEIGHTS
MCKINLEY

A. Galassini
W. F. Inversetti
E. A. Opila
R. E. LeVault

CHICAGO HEIGHTS
WENTWORTH

M. J. Butera (14)
D. H. Loekle

CAMDEN

F. T. Gillan
A. May

NEW ORLEANS

R. Bond
A. R. Anticich
L. J. Sands
A. Clavin (8)

SAVANNAH

G. E. Byrd
J. W. Fidler

FREMONT

R. J. Donovan
M. L. Haley
E. Gordon
R. Leftridge

KOSMOSDALE

J. C. Powell
J. L. Chilcote
H. Schauburger, Jr.

LOUISVILLE

H. J. Wurth
R. T. Capp
R. W. Lishman

GLENS FALLS

T. W. Myers
E. A. Galery
L. G. Swanson

FRONTIER STONE

C. J. Loiacano
D. Mahar
R. Pass
E. F. Wright

FAIRFIELD

F. Gumbs

HUNT VALLEY

N. T. Crolius

LOS ANGELES - PIONEER

J. O' Neill
R. C. Berns
A. C. Costa
E. J. Fletcher
W. Harvey
J. Holt
R. G. Huntington
J. F. Kent
R. C. Mansfield
J. F. Pung
C. R. Rainey
J. A. Sweeney
J. Weisheit
D. Wisdom, RN

1650 ALAMEDA STREET

K. J. Fleischhauer
J. C. MacDonald
W. W. McCandlish

FREDERICK

S. L. Russell

JERSEY CITY

D. Billingsley
M. D. Maurin

HOWE'S CAVE

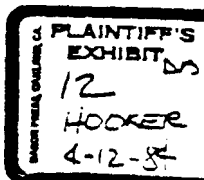
D. Ordon

MODESTO

J. Jefferies
W. H. Keller
J. P. Kenealy

REDDING

R. J. Abraham
T. Clemens



INSTRUCTION SHEET

ASBESTOS HANDLING RE-INSTRUCTION
SHEET FOR RECEIVING PERSONNEL

20#13

1. It has been determined that breathing asbestos dust may be hazardous to your health.
2. For your own safety care must be taken not to release asbestos into the environment (air & water).
3. When opening an asbestos boxcar respirators must be worn.
4. Before unloading a boxcar all visible asbestos spills must be vacuumed or wetted first and then picked up.
5. Before unloading a boxcar all visible broken bags must be taped shut.
6. Only after 3, 4 and 5 above have been completed can the boxcar be unloaded without wearing a respirator.
7. If bags are broken during unloading they must be immediately taped shut and any asbestos spills cleaned.
8. Care must be used not to tear or drop asbestos bags.
9. Asbestos spills in aisles must be immediately cleaned with the propane vacuum or wetted first and then picked up.
10. All asbestos containing wastes (spills, empty asbestos bags) must be sealed in plastic bags, affixed with a warning label, and placed directly into the gondola.
11. Care must be used not to tear the asbestos waste containing bags when dumped into the gondola.
12. Asbestos contaminated clothing must be turned in to be laundered by the company.
13. Clothing with visible amounts of asbestos containing material on them cannot be removed from the plant.
14. All dust collecting equipment has been installed for your protection. Any malfunctions should be reported to your supervisor.
15. The above rules are required in order to protect the health of all employees. State and Federal Law requires that they be followed and enforced.

EMPLOYEES WHO VIOLATE THE ABOVE RULES CAN BE
SUBJECT TO SEVERE DISCIPLINARY ACTION.

PLAINTIFF'S
EXHIBIT
13
HOOKER
4-12-81

EMPLOYEES WHO VIOLATE THE ABOVE RULES CAN BE
SUBJECT TO SEVERE DISCIPLINARY ACTION.

I have been instructed on the above and understand the potential hazards of asbestos fibers and also the importance of following the instructions on the handling of asbestos.

Signed: _____
(Employee)

Signed: _____
(Supervisor)

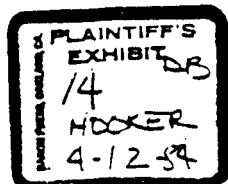
Date: _____

ASBESTOS HAZARD INSTRUCTION
SHEET FOR EMPLOYEES

32#14

During and in the course of your employment you may occasionally be exposed to asbestos containing material. The above rule states that all employees who may be exposed to asbestos or asbestos containing material must be informed of its potential health hazards. They must also be informed of the precautions necessary to prevent asbestos fibers from being dispersed into the environment.

1. It has been determined that breathing asbestos dust may be hazardous to your health.
2. For your own safety care must be taken not to release asbestos into the environment.
3. Asbestos containing wastes must be immediately vacuumed. Where this is impossible, wastes must be wetted first and then picked up.
4. All asbestos containing wastes must be sealed in plastic bags, and affixed with a warning label.
5. Clothing with visible amounts of asbestos containing material on them cannot be removed from the plant. Vacuum cleaners have been provided and must be used to remove any such material.
6. The above rules are required in order to protect the health of all employees. State and Federal Law requires that they be followed. If you have questions concerning the above ask your supervisor.



INSTRUCTION SHEET

ASBESTOS HANDLING RE-INSTRUCTION
SHEET FOR DRY-MIX ROOM ~~EMPLOYEES~~ EMPLOYEES

1. It has been determined that breathing asbestos dust may be hazardous to your health.
2. Sweeping asbestos is not permitted.
3. After cleaning the Banburys, the rest of the work day should be used to clean the dry-mix room.
4. All spills under the dry-mixer platform, conveyors, and in the aisles must be immediately vacuumed clean.
5. Spills which cannot be vacuumed must be wetted first and then picked up by shovel.
6. The dust collecting barrel on the roof must be changed as often as required. All collected dust must be sealed in plastic bags and labeled.
7. The electric vacuum filter bags must be turned inside out and cleaned when suction begins to stop.
8. Eating is not permitted in the dry-mix room.
9. Asbestos contaminated clothing must be turned in to be laundered by the company.
10. Clothing with visible amounts of asbestos containing material on them cannot be removed from the plant.
11. The above rules are required in order to protect the health of all employees. State and Federal Law requires that they be followed and enforced.

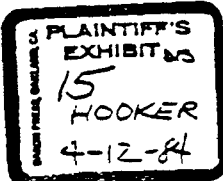
EMPLOYEES WHO VIOLATE THE ABOVE RULES CAN BE
SUBJECT TO SEVERE DISCIPLINARY ACTION.

have been instructed on the above and understand the potential hazards of asbestos fibers and also the importance of following the instructions for the handling of asbestos.

Signed: _____
(Employee)

te: _____

Signed: _____
(Supervisor)



AMERICAN MUTUAL LIABILITY INSURANCE COMPANY

REPORT OF INVESTIGATION

THE FLINTKOTE COMPANY - TILETEX PLANT

McKinley Avenue
Chicago Heights, Illinois

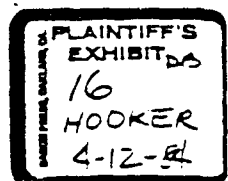
AM

By

Leon D. Horowitz

Chief, Industrial Hygiene Section

ENGINEERING DEPARTMENT
WAKEFIELD, MASSACHUSETTS



ACKNOWLEDGEMENT

The author of this report wishes to acknowledge the courtesy extended to him of Mr. E.A. Opila, Plant Manager, and Mr. Fred Swanson, Assistant Plant Manager, during his visit to this plant on March 10, 1968. He also acknowledges the help given to him, during this study, of Mr. J. T. Grism of the Chicago Office of American Mutual Liability Insurance Company.

PURPOSE

To evaluate the control of the potentially hazardous dusts, asbestos, talc, and limestone at the floor tile manufacturing operations.

Neither the visit of our representative under the terms of our policy nor the making of this report constitutes an undertaking to determine or warrant that your premises or operations are safe.

CONCLUSIONS

Airborne dust concentrations were excessive in the Scrap Grinding Area and at the No. 7 Dry Mix Feed.

ANALYSIS OF ENVIRONMENTAL DUST

Air samples for dust count were obtained in the Scrap Grinding Area and the Dry Mix Feed hoppers of No. 1, 6, and 7 lines. The results of these dust counts are shown on the attached Air Analysis Table.

The Threshold Limit Value (T.L.V.) of 14.0 million particles per cubic foot (mppcf) is based on the formulation of toxic mineral dusts going into feed mixtures.

Although approximately 3 to 5 bags of pure asbestos are added to each batch at the feed stations, it is of short duration and the batch loadings are intermittently spaced rather than continuous. Some investigators might apply the more stringent T.L.V. of 5.0 mppcf (or the newly proposed 2.0 mppcf). However, it is our opinion that the exposure observed does not warrant such strict interpretation.

Note that the three air samples which did not exceed the T.L.V. of 14.0 mppcf were also close to or below the T.L.V. of 5.0 mppcf used for asbestos alone.

DESCRIPTION OF PROCESS AND DUST EXPOSURE

Dry Mix Feed to Tile Machines

Number 6 and Number 7 Dry Feed Mixers are loaded from raw material paper bags through hinged doors at the top of the mixers. Two-inch slotted hoods at each end of each pair of doors provide 350 feet per minute slot velocity. Thus, the air movement at the front of the feed opening is less than 100 feet per minute and is, therefore, inadequate to provide the required control of dust during dumping.

These slots have been damaged by heavy bags, etc., and are, therefore, restricted at several points.

The Dry Mix Feed for the Chip Manufacturing Line (Specialty Line) is controlled by a large enclosing hood with duct take off at one end with very low air movement into the duct (200 feet per minute air velocity), therefore, providing practically no air movement for dust control at the feed opening when bags are dumped into the mixer.

Scrap Grinding Area

All reject and waste tile are brought to this area in steel drums for grinding and eventual use in the tile manufacture. The drums are dumped, by mechanical means, into a hopper and belt-conveyed to a grinder after which it is belt-conveyed to bins at one end of the room.

Although some dust collection is provided, it is very inadequate. The drum dumping created a great deal of dust as does the grinder, belt conveyors, belt transfer points, and belt dumping into the bins.

Employees do not wear dust respirators during any of these operations.

RECOMMENDATIONS

1. The exhaust slots at No. 6 & 7 Dry Feed Mixers should be repaired and the exhaust volume provided by the dust collecting system should be increased.

One method to provide adequate air velocity control of the dust created at this location is to provide slots at both sides of each feed opening instead of across two feed openings. This method is used at the Tile-Tex plant in New Orleans where air velocities provided at a similar slot-type exhaust hood was much greater than at this location. The door hinged at the rear between the two slots on both sides effectively helps provide an air velocity away from the operator and dumping operation.

Another effective method of providing adequate air velocity for controlling dust at this dump operation is to exhaust air directly from the mixer whenever the doors are opened. This would provide an inward movement of air which could effectively prevent the dust from rising up to the operator's breathing zone.

2. Although dust counts were not excessive at the Dry Mix Feed dumping operation for the Chip Manufacturing Line, exhaust ventilation at both dump hoods should be improved. This would require an evaluation of the dust collecting system which is not providing adequate air movement and a better hood enclosure. The hood opening should be made smaller so that the inward air movement provided by an improved dust collecting system would be most effective at the source of dust contamination, namely at the feed opening of the mixer.
3. It appears that a new dust collecting system must be provided at the Scrap Grinding Operation. The drum dump hopper must be completely enclosed and ventilated to prevent dust from escaping to the room air. All belts must be enclosed and provided with exhaust ventilation to prevent dust escape to room air. All belt transfer points must be redesigned to prevent spillage

and exhaust hood enclosures must be used at these points to prevent escape of dust to the room atmosphere. The grinder must be enclosed or provided with exhaust ventilation to prevent atmospheric contamination. The bins must also be vented to the dust collecting system.

This dust collecting system should include a cloth bag-type dust collector with automatic shaking device and provisions to return collected dust to the manufacturing process if so desired. Exhaust air must be discharged to the outside.

4. All operators exposed to dust concentrations which exceed the established T.L.V. must wear only respirators approved by U.S. Bureau of Mines for pneumoconiosis dusts. A respirator program, to maintain and keep individual respirators clean, must be instituted.
5. Annual (as well as preemployment) chest X-rays (14" x 17") must be made on all employees working in toxic dusty areas.
6. Housekeeping must be maintained in the Mixer Feed areas as well as the Scrap Grinder Area.

DATE 3-10-69PLANT Flintkote-Tiletex Plant LOCATION McKinley Ave., Chicago Heights, I

AIR ANALYSIS TABLE

Sample No.	Time Mins.	Location and Events	Asbestos, Talc, Limestone, Mixture Concentration (C)
BN-13	10	Breathing Zone Scrap Grinding Area	26.7 *
BN-15	10	General Air Scrap Grinding Area	27.0 *
BN-14	10	Dry Mix Feed - No. 6	5.3
BN-25	10	Dry Mix Feed No. 7	19.3 *
BN-16	10	Manual Shoveling in Calendar No. 1 Line Calendar Roll	2.0
BN-26	10	No. 1 Line Dry Mixer (Room)	4.0

Threshold Limit Value

14.0 mppcf

A—Milligrams per Cubic Meter

B—Parts per Million

C—Million Particles per Cubic Foot

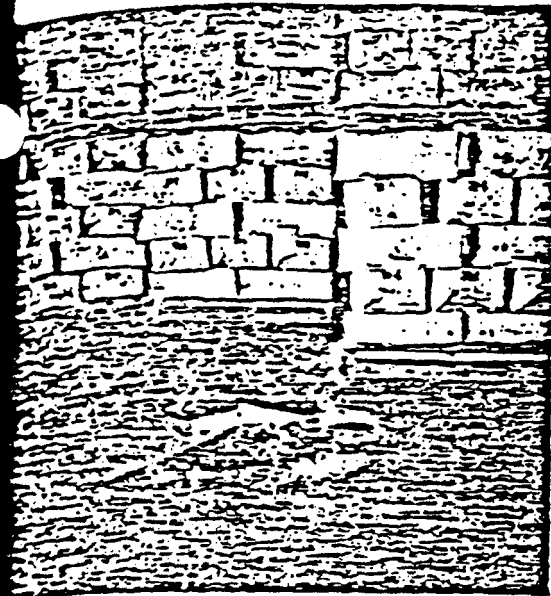
* = Exceeds T.L.V.

12#17

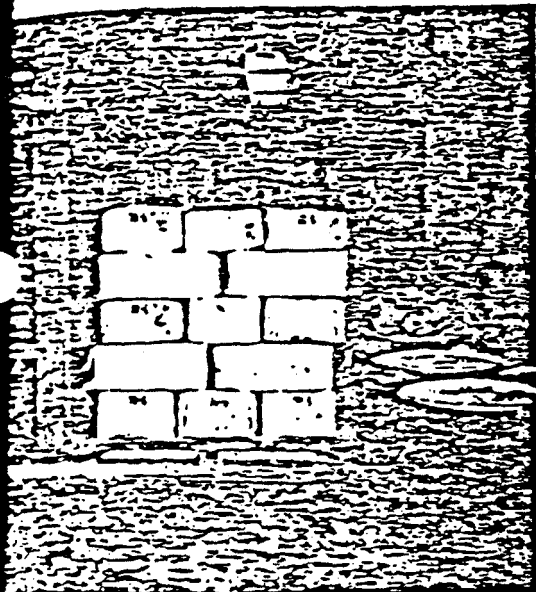
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1980 safety tour - photographs and corrective
actions for asbestos handling/storage; by A. Perez.

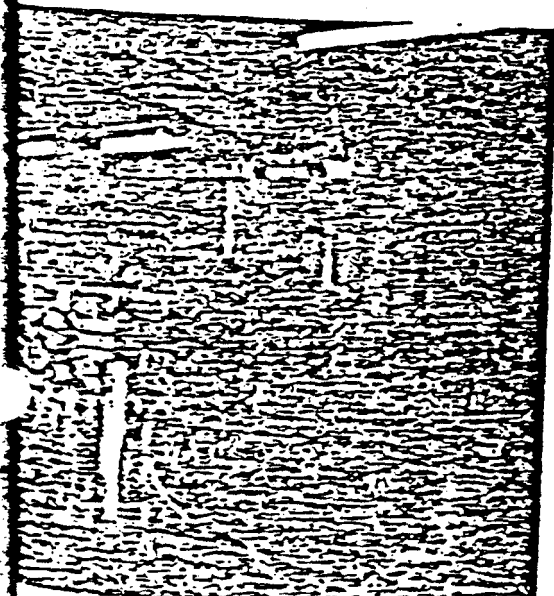
PLAINTIFF'S
EXHIBIT
17
HOOKER
4-12-81



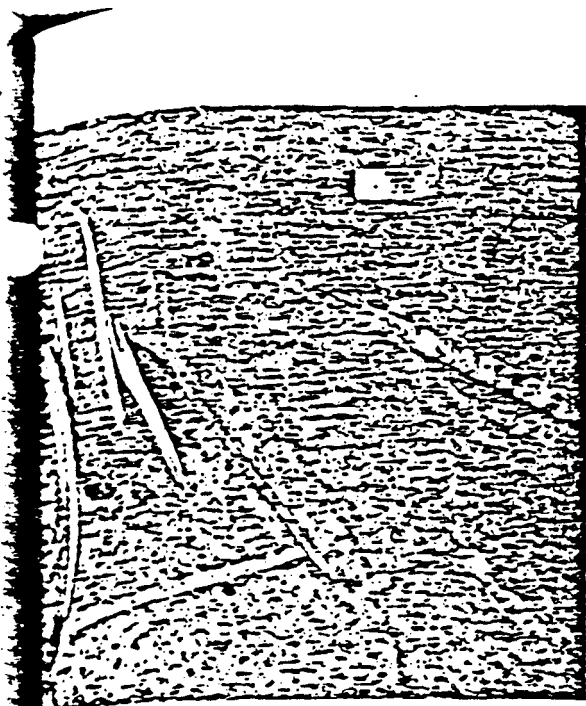
- (6) Asbestos from broken bags, must be cleaned up, immediately. We recently received a OSHA Violation for this and a repeat citation would constitute a heavy civil penalty.



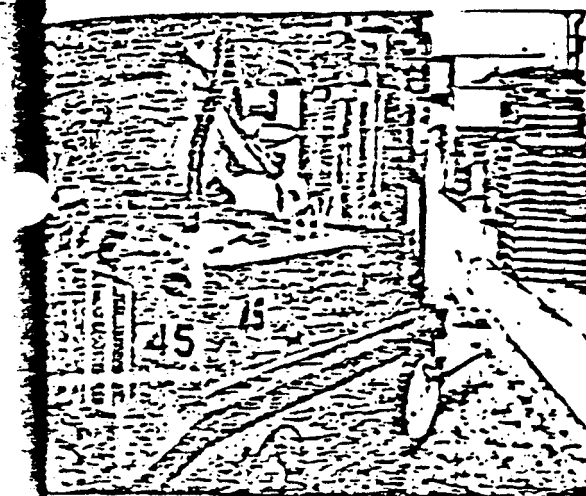
- (7) Asbestos brought from the warehouse should be taken directly to the storage area. It should not remain in work areas for any extended periods. Moreover, the persons involved in moving asbestos must begin wearing respirators. This practice should be implemented immediately. Post procedure in Plant Safety Rules.



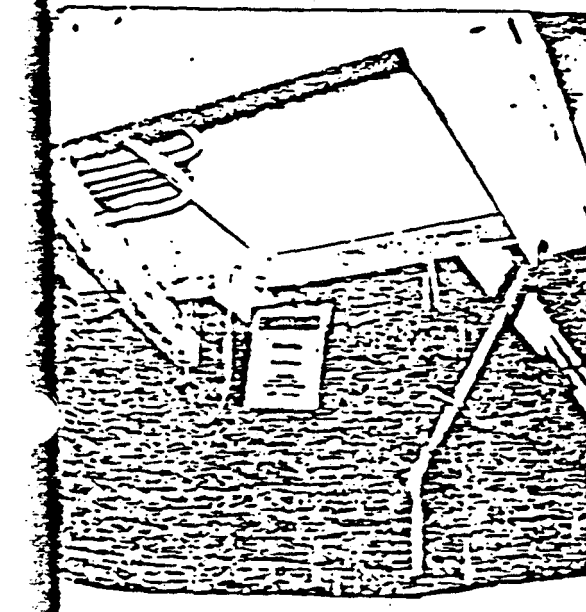
- (8) Consideration should be given to areas where asbestos is dumped. Isolation of these areas will have to be discussed.



- (9) Board used as a ramp is loose and needs additional support to alleviate the possibility of falls.

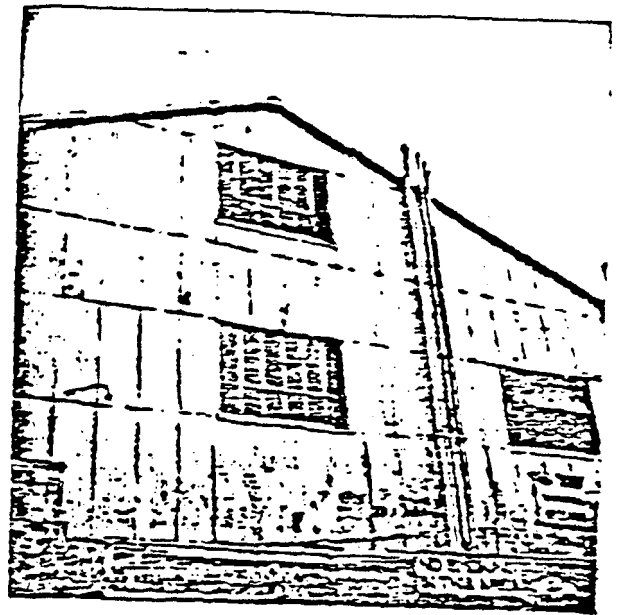
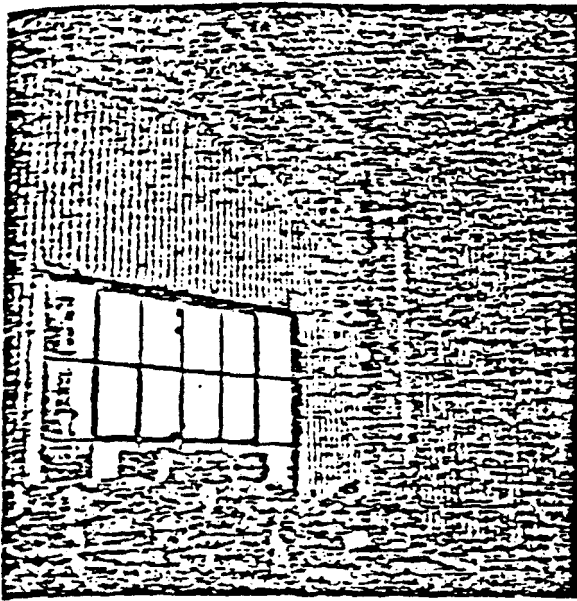


- (10) Lift truck must have lift capacity posted. Immediate attention is necessary for all departmental lift trucks.



- (11) Caution sign is hung in the air by wire. The sign could fall on someone. A bracket for the sign would suffice.

- (12) Windows and wall holes should be repaired especially in restricted areas where asbestos is being used.



Added recommendations:

The Pedestrian crossing outside entrance to Emulsion facility should be repainted. A additional "Stop" sign should be added for better visiability. At the present time, Industrial vehicles are ignoring this stop sign. Supervisors are urged to issue safety violations for continued practice of not making complete stops in this designated area. Any problems enforcing this rule should be brought to the attention of the Safety Dept.

During my tour, I noticed that the practice of good housekeeping is well followed. There were some areas, but the majority of the plant appears extremely clean. Please congradulate all persons involved.

Alfred Perez

AP/rh

Pt # 18

how to work
with it and
protect your
health.

PLAINTIFFS
EXHIBIT NO
18
HOOKER
4-12-84

Asbestos

Asbestos is a general term describing a family of fibrous minerals which are used in the manufacture of some 3,000 different products. Like Asbestos mines and sells chrysotile asbestos fiber, the major type that accounts for 90% of the asbestos used. Many of these essential asbestos products such as brake linings, gaskets and coatings have no known practical substitutes. Asbestos products protect and save lives every day.

Much has been written about the hazards of asbestos fibers in the workplace. What follows is a brief discussion of these serious problems. Please keep in mind that while your employer may have the primary responsibility to protect its workers, your cooperation is essential.

Airborne asbestos fibers are present in all asbestos product manufacturing operations, mines and mills, and some product application processes. However, by properly controlling dust concentrations and meeting government regulations, the hazard to workers is minimized.

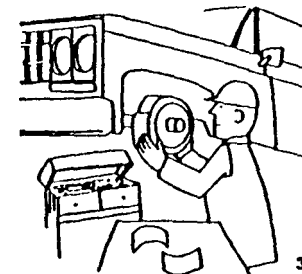
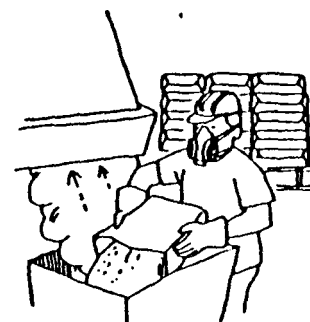


Asbestos in the Workplace

There are two major areas where the worker contacts asbestos. The first is in the primary manufacturing process where the bags are opened and the asbestos is mixed and processed. The second involves the application and use of these asbestos products. More than 90% of the asbestos products made in the United States will not produce hazardous dust levels because the fibers are "locked" in by cement, plastics or other binders. However, certain operations such as drilling, sawing and grinding, demolition and removal of old asbestos insulation and installing brake lining can release fiber into the air. Proper work practices, protective equipment and engineering controls can be used to prevent worker exposure to airborne asbestos dust concentrations above allowable government limits.

Health Hazards

Exposure to asbestos dust in the workplace over a period of years can increase the risk of developing certain diseases. The experts are not all in agreement on the level below which there is no risk. Available medical evidence indicates that your chances of contracting asbestos-related disease are minimized as asbestos concentrations in the workplace are reduced to approved levels. Several studies accept and recommend 5 fibers per cubic centimeter while others prefer



2 fibers per cc and reduction to 0.5 fibers has been proposed.
Current OSHA regulations are 2 fibers per cc.

In order to provide you with notice and warning of asbestos health hazards, Lake Asbestos places a label on each bag of asbestos fiber which it sells. The label reads as follows:

**DANGER—Contains Asbestos Fibers •
Avoid Creating Dust • Asbestosis, Lung Cancer**

There are four diseases associated with asbestos dust exposure. First is asbestosis which damages the lungs and may permanently impair breathing. In certain severe cases, it may be fatal. This disease appears in those who have been exposed to excessive concentrations of asbestos dust over a period of years.
Lung and gastrointestinal cancer (stomach, colon and rectum) have been shown to be associated with many years of exposure to excess concentrations of asbestos dust and can be fatal.
However, studies carried out on workers in the asbestos industry in England and Canada have shown that as total exposure to airborne asbestos fiber was reduced, there was a corresponding reduction in the excess mortality observed.
The fourth disease is mesothelioma, a rare and incurable form of cancer of the lining of the chest or abdominal cavity. It may occur from elevated concentrations of asbestos and has been observed in individuals exposed to low and to unknown concentrations of asbestos fiber.

**and Other Fatal Diseases
May Be Caused By
Inhalation of Asbestos •
Smoking Greatly
Increases Lung
Cancer Risk**

Smoking

Here is where you can greatly reduce your chances of developing lung cancer. It has been established that cigarette smoking GREATLY increases the risk of developing lung cancer in asbestos workers. Further, the lung cancer risk for the asbestos worker in a well controlled environment who has never smoked appears to be no greater than the average person who does not smoke.

It is essential that asbestos workers who smoke, during work hours or at other times, take immediate action to STOP SMOKING. Asbestos workers who do not smoke should not start.

Also, if you or your family has a history of lung problems, you may be susceptible to asbestos health hazards. As a result, the regular lung examinations provided by your company are especially important. Be sure to take advantage of this service.

Protecting Your Health: Your Employer's Role

There are many things that you and your employer must do to protect your health as well as to assure compliance with government regulations. You will find your employer more than willing to do his part, including the following:

1. Inform workers of the potential hazards to their health from asbestos exposure by conducting health education and training programs.



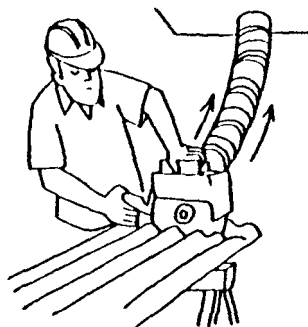
Measure asbestos dust concentrations by means of portable
meters worn by the workers

Warn workers of the actions to be taken to reduce their
exposure, if the exposure is higher than the
maximum set standard

Prevent asbestos fibers from escaping and spreading by
providing mechanical ventilation, isolating dusty operations,
installing dust control systems, and fitting tools with
dust ventilation, if feasible



5. Post caution signs
in work areas where
airborne dust
concentrations exceed
the standard



6. Provide approved respirators for use when exposures to
asbestos exceed the standard.



7. Provide annual medical
examinations for workers
exposed to asbestos dust.
These records must be
kept for 20 years.
At a worker's request,
his own medical records
must be made available
to his family physician.



8. Provide double lockers, and provide change rooms for use at
locations where dust concentrations exceed the standard.

9. Provide coveralls and other protective equipment.

Protecting Your Health: What You Must Do

There are many things that you must do to keep a safe workplace. Things that you as an individual do to protect your own health and the health of your employees include:

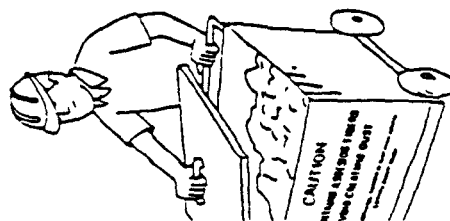
General Precautions. Know and follow the following recommended work practices for handling asbestos fiber. In all stages of handling, packaging, transporting, unloading, stowing, and in plant moving, asbestos fiber bags should be handled carefully and in such a manner as to prevent damage to bags and the generation of dust.

Damaged bags should be immediately repaired, resealed or put into closed receptacles. Any spillage of asbestos fiber should be cleaned up immediately—first by vacuum equipment or, after thoroughly wetting, by sweeping—and should be deposited in suitable closed receptacles.



Consult and observe OSHA regulations governing asbestos in the workplace, EPA rules on discharge to the ambient air, and other local codes, rules or regulations controlling the handling and use of asbestos fiber.

2. **Unloading.** Utilized bags should be lifted intact to and from holds of ships, and off and on land transport by forklift trucks or other modes of transportation. Hooks or other sharp instruments should not be used. Loose fiber accumulated during transit should be picked up by vacuum cleaner before unloading.
3. **Storage.** For storage, fiber bags should be stacked and moved with care to avoid breakage, protected from puncture by moving vehicles; and, if possible, should be isolated from traffic in the warehouse and covered to prevent dust generation. To prevent deterioration of stored bags, the principle of first-in, first-out should be followed.
4. **Handling.** Fully effective dust control systems should be operated at all stages of inplant handling where dust is created, such as in bag opening, fiber dumping and bag disposal operations. Loose fiber should be cleaned from work areas by vacuum cleaner.



or after thoroughly wetting, by sweeping, and then deposited in properly labeled, sealed, impermeable bags.

5. Protective Equipment. Wearing of respiratory equipment approved for protection against asbestos dust should be required at all stages of asbestos fiber handling where quantities of dust are generated which cannot be kept within allowable limits by dust control equipment or other methods.

6. Transport. Where the use of asbestos requires the transport of loose fiber, covers should be employed on any vehicles or containers used in order to prevent spilling and dust generation.

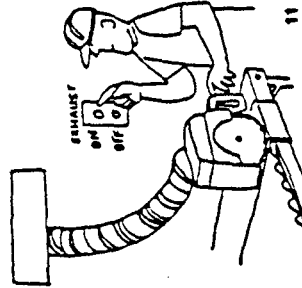
7. Waste Material. Waste material, such as collected dust and empty fiber bags, should be collected and disposed of in properly labeled, closed, impermeable containers or sealed, impermeable bags. Safety practices outlined above in the handling and Protective Equipment sections should be followed during these operations.

All dust from exhaust systems should be collected and safely disposed of, being careful not to release dust into the outside air. Particular attention should be paid to hygiene practices by employees whose job it is to dispose of collected dust from fabric filter dust collection and similar cleaning operations.

8. If you are not sure how to handle a material or do a job without creating dust, ask to your supervisor.

9. If you think that your employer may have overlooked a possible hazard, bring it to the attention of your supervisor.

10. Learn how to operate control equipment. Never bypass ventilation and dust collection systems, but use and maintain them properly and regularly.



Clean up at the end of work periods is important.
Do not shake or blow the dirt off your clothes.
Use vacuum equipment to remove excess dust.

Do not wear home any clothing that might be carrying
asbestos dust, because you might expose your
family to the fibers.

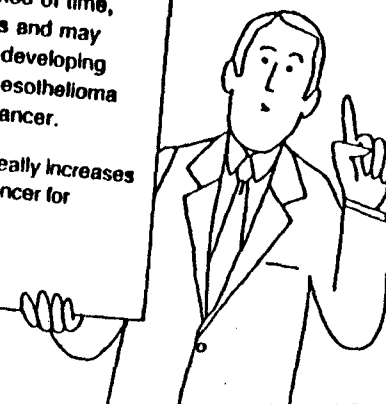
Actively participate in asbestos health education
programs provided by your employer. The more you
know about asbestos health dangers and how to avoid
exposing yourself to them, the quicker we can all
achieve the goal of eliminating the hazards from
working with asbestos.



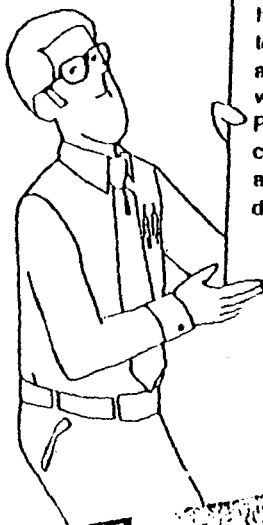
Remember—

Asbestos fiber can be hazardous
to your health and excessive dust
exposure, over a period of time,
can cause asbestosis and may
increase your risk of developing
cancer of the lung, mesothelioma
and gastrointestinal cancer.

Smoking at any time greatly increases
the possibility of lung cancer for
asbestos workers.



Management's Job—



The hazards of working with asbestos can be reduced if everyone does his part. **MANAGEMENT'S** job is to **RESEARCH** health risks associated with asbestos and new ways to control asbestos dust, **PROVIDE** a workplace which complies with government standards and **INSTRUCT** employees about the dangers and methods of protection.

Employee's Job—



EMPLOYEE'S job, **YOUR** job, is to know how to protect yourself on the job by learning—

1. What asbestos containing materials are made or used at your workplace.
2. How to handle and work with these materials.
3. How to maintain control equipment.
4. The importance of cooperating with government and management to get the job done safely.

AFTER ALL—It's your health and safety and nothing is more important.

WARNING LABELS ON PRODUCTS
MANUFACTURED OR SOLD
BY FLINTKOTE

The labels for asbestos-containing products manufactured by Flintkote do not contain a warning which relates to asbestos. In the past, for short periods of time, warning labels have appeared on two Flintkote products:

(1) Skykote

From 1977-August, 1979 a warning appeared on the Skykote label which stated as follows:

"Warning, safety precautions contain asbestos fibers. OSHA has stated that repeated inhalation of asbestos fiber is a health hazard. Harmful if swallowed, keep out of reach of children."

This warning appeared on the upper part of the label.

(2) C 13 C4

From July 29, 1975 to early 1977, the following warning appeared on the C 13 C4 label:

"Warning, this product may not be sprayed in California."

This warning appeared on the upper part of the label.

EXHIBIT C



In addition, Flintkote sold ready-mix joint treatment compound containing asbestos manufactured by independent companies from 1964 to 1977. It was sold in cans ranging from one to five gallons. The Flintkote Company does not maintain a file of the packages and/or labels of products bought from independent manufacturers. It is believed that the following warning label was placed on the packages and/or labels from 1972 to 1977:

CAUTION

CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
BREATHING ASBESTOS DUST
MAY CAUSE
SERIOUS BODILY HARM

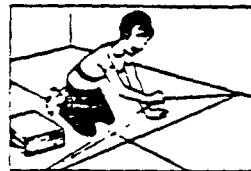
When dry sanding this product wear eye protection and a respirator which is U.S. Bureau of Mines approved for toxic, nuisance and pneumoconiosis-producing dusts. Wet sanding or sponging is recommended where practical.

Package labels generally contained use instructions on them. Instruction booklets were distributed to buyers. None of these instructions pertain to any asbestos-associated danger.

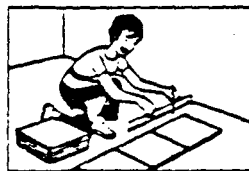
Now you can install a beautiful new floor in no time at all with FLINTKOTE peel-stick reinforced vinyl floor tile.

FLINTKOTE Peel and Stick Tile is ready with the adhesive on the back. It's peel-and-stick. Just remove the protective paper and put the tile in place.

No messy adhesives. No waiting. Ideal for any room in the home—basement or attic. Use over concrete, wood, linoleum or floor tile that is smooth and tightly adhered.



Start from the corner of the room looking toward center. Measure from wall to wall. Adjust string at center of floor at each end. Pull string with chain. Stretch tight and let spring slack to make a chain into an hourglass shape. Center of chain will give proper chain line of right angles to wall.



Lay a row of tiles. Lay each tile with corner pointing toward center and edge of tile to edge of room. If the distance between wall and edge of tile is less than 1/2" or more than 1/2", trim corner with 1/2" of corner with by measuring a new chain and right angles to wall.

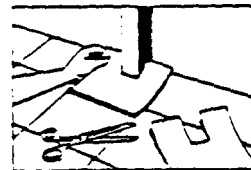


JUST THIS EASY JUST THIS QUICK—Remove paper from back of each tile only when you are ready to use it. Start laying the tiles corner point toward center. Do not stretch the tile. Lay in place at right angles to the wall.

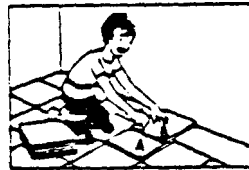


But don't be lazy when it comes to the tile. Don't apply pressure to the tile until accurately placed. Once pressure is applied the tile is extremely difficult to remove.

CAUTION: READ BEFORE USING TILES. THE RELEASE PAPER HAS A SLIPPERY SURFACE. DO NOT STAND ON PIECES OF THE RELEASE PAPER OR ON ANY TILES UNTIL THE RELEASE PAPER HAS BEEN REMOVED. IT IS RECOMMENDED THAT THE RELEASE PAPER BE PLACED IN THE TILE CARTON OR IN A SUITABLE RECEPTACLE IMMEDIATELY UPON REMOVAL FROM THE TILE.



To fit around obstacles or at edge of room, cut with shears or utility knife and sharp straight edge. When edge of tile and cut edge meet, push tile into place. To fit around obstacles, push tile against obstacle. Push tile into place.



To fit around wall, push a piece of tape (figure 1) over edge of tile. Push corner of tile (figure 2) against wall. Push tile into place. To fit around wall, push a piece of tape (figure 1) over edge of tile. Push corner of tile (figure 2) against wall. Push tile into place.

WARRANTED TO STICK
FLINTKOTE Peel and Stick Tile is warranted to stick for 5 years when used in accordance with these instructions. Return to your dealer only if the tile fails to adhere properly and we will arrange to replace them free of charge.
See other side for limited warranty details.

IMPORTANT INSTALLATION INSTRUCTIONS

Most designs were made to be installed with the grain or machine direction of adjacent tiles in opposite directions. Installed this way a more uniform design and pattern over the whole floor is obtained. To assist you, arrows were printed on back of tile all in machine direction. Tiles should be laid with arrows in adjacent tiles pointing at right angles to each other.

A natural handcrafted look was built into all designs by making mortar lines and wood stripes not all mechanically uniform or straight. Lines of adjacent tiles will not match precisely. Rotating adjacent tiles 180° sometimes improves the fit.

CAUTION: READ BEFORE USING TILES. THE RELEASE PAPER HAS A SLIPPERY SURFACE. DO NOT STAND ON PIECES OF THE RELEASE PAPER OR ON ANY TILES UNTIL THE RELEASE PAPER HAS BEEN REMOVED. IT IS RECOMMENDED THAT THE RELEASE PAPER BE PLACED IN THE TILE CARTON OR IN A SUITABLE RECEPTACLE IMMEDIATELY UPON REMOVAL FROM THE TILE.

For best results before installing this tile, open the subpackage and allow the tile to lie overnight outside of the carton in order for it to acclimate with temperature and humidity of your room. Room temperature should be at least 70°F for 24 hours before and after the installation, as well as during the actual laying of the tile.

Not all machine runs of the same color are identical. BEFORE you install your tile make sure it is all the same color and shade lot.

NEW FLOOR CARE

Allow 48 hours after installation for tile to lie flat and seal itself. Keep loose dirt swept or vacuumed up during that time and clean spills with damp cloth. Then wash the floor thoroughly using FLINTKOTE Floor Cleaner or another mild cleaner. Rinse. Do not flood the floor. When clean and dry apply two thin coats (allow first to dry before applying second coat) of FLINTKOTE Floor Finish or a comparable non-solvent finish designed for vinyl asbestos floor tile. Besides adding luster, EARLY WAXING IS IMPORTANT to protect the coloring in the embossed areas and to add resistance to scuffing and staining. This is most helpful on dark colors which show scuffs more readily, as do natural brick and stone. Vigorous rubbing with steel wool, harsh cleaners and abrasives can damage tile, especially the embossed coloring and dark colored surfaces. For stubborn spots, use stain and mild household cleanser.

Do not use strong detergents, cleansers or waxes containing solvents such as gasoline, kerosene, benzene, turpentine, etc. Do not use harsh lacquer or shellac. Use products designed for your floor.

Protect your floor with proper furniture glides, casters and mats. All resilient floor tiles are subject to indentation from sharp penetrating objects or from heavy loads concentrated in limited areas.

Resilient floors should be protected at all times from the direct rays of the sun.

SUBFLOORS

Here is a general guide as to what to look for on various types of subfloors. Your Flintkote Flooring Dealer will be happy to answer questions on any specific problems.

OVER CONCRETE - must be dry, smooth, clean and level. Fill holes and cracks with FLINTKOTE latex underlayment.

OVER PAINT - do not install tile over painted floors in contact with the wall. In basements or ground floor in basementless homes. All right on subfloors which are outdoors or over basements, if paint is not properly adhered and not blistered or peeling.

OVER WOOD - must be a minimum of two feet above ground with good ventilation. Must be firm, smooth and without springiness. Replace badly worn boards. Nail loose boards with 1 1/2" or longer flat head drive screws - drive flush. Single layer subfloors or double layer subfloors with no boards over 3/4" wide should be covered with at least 3/8" plywood. APA grade recommended UNDERLAYMENT. Do not use flooring left over plywood.

OVER OLD FLOORCOVERINGS - can use over asphalt tile, vinyl asbestos tile, old linoleum and other tiles if they are down flat and tight with all gaps or openings removed, however, old linoleum or tiles other than asphalt or vinyl asbestos should be removed if on subfloors in contact with earth. If you are having problems with present floorcovering, don't expect to solve them by adding another layer of tile. If old floorcovering is too soft, it could cause indentation marks. Tearing or abrading will eventually show through from pattern of the old floorcovering. Do not install over cushioned sheet flooring.

WARNING

DO NOT SAND EXISTING RESILIENT FLOORING BACKING OR LINING FELT. THESE PRODUCTS MAY CONTAIN ASBESTOS FIBERS THAT ARE NOT READILY IDENTIFIABLE. INHALATION OF ASBESTOS DUST MAY CAUSE ASBESTOSIS OR OTHER SERIOUS BODILY HARM.

OVER OLD TERRAZZO - must be dry, smooth, clean and level. Fill holes and cracks.

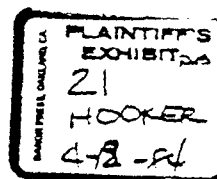
FLINTKOTE FLOORING PRODUCTS, EAST RUTHERFORD, N.J. 07073

95-140-02

EXHIBIT D



57,57/58



File Josephine

480 Central Avenue
E. Rutherford, New Jersey 07073
May 2, 1968

Mr. Albert E. Fay
Vice President Marketing
National Gypsum Company
Buffalo, New York 14202

Environmental Health Hazards

Dear Al:

This is with reference to our telephone conversation the other day, and in acknowledgement of your draft letter to Chief Executive Officers of all Asbestos Cement producers, dated April 25, 1968.

The Q.A.M.A. has done a considerable amount of work and has spent a great deal of money on the subject of asbestos fiber and health. The first Industrial Health Clinic was established in Asbestos, Quebec by Dr. Lanza in the late twenties and operated continuously since that time, keeping and following up health records for all the families in the area. The interest was chiefly in the pulmonary field and the industry kept abreast of the work being done at the time at hospitals in the Laurentians, at the Saranac Laboratory and Trudeau Foundation in the Adirondacks. In the late 1940's, a similar Industrial Clinic was established for the six mines located at Thetford Mines, Quebec. The industry through these clinics has been in close touch with all the authorities working in the field of respiratory physiology, not only in this continent but throughout the world. As a result of this work, protective and preventative engineering has taken place in the mines and mills, and the importance of keeping the working atmosphere free of asbestos dust has been stressed. Dust counts are conducted periodically at all mines and mills by the Q.A.M.A. As you may be aware, as recently as 1955 Dr. Daniel Braun, formerly of the Industrial Hygiene Foundation (Mellon Institute) Pittsburgh conducted and published an epidemiological survey in the Thetford Mines area on the incidence of cancer with the Quebec asbestos workers. This survey concludes that the cancer incidence is not any higher with such workers than with other population groups of the area where no asbestos industry is present. I am citing this

May 2, 1968

one isolated study, not to indicate that the industry has no problems because I think it has, but rather to indicate the danger of drawing conclusions on any one particular study. I would say the same holds true of Dr. Irving J. Selikoff's study, published November 1964 at the New York Academy of Medicine, meeting in New York. While Dr. Braun's study covered workers in a controlled environment aware of a health problem, Dr. Selikoff's study covered insulation workers, working for the most part under uncontrolled conditions with little protective engineering of the environmental working conditions.

The Q.A.M.A. is so much aware of the problem of health in the use of asbestos, that it has sponsored the Institute of Occupational and Environmental Health with offices in Montreal. To date, this body receives its financial support from the Q.A.M.A., and as you may know, the budget this year is around \$300,000. The Institute consists of an Executive Committee and a Scientific Committee of doctors. The first meeting of the Scientific Committee was held in July of 1966. The Scientific Committee is composed of Dr. George Wright, Director of the Committee and Head of Research at St. Luke's Hospital, Cleveland, Ohio; Dr. Paul Kotin, Director of U.S. Center of Environmental Sciences and of Center of Etiology of Cancer; Dr. Marvin Cushman, Professor of New York University and Bellevue Hospital; Dr. Fernand Gregoire, Physiologist and Head of Lavoisier Clinic, Montreal; Dr. John Beattie, Professor at Queen's College, Cambridge, England; Dr. Daniel Braun, former Director of the Industrial Hygiene Foundation and, Dr. P. Palnar, Secretary of the Committee and formerly engaged in medical research at St. Luke's Hospital, Cleveland, Ohio.

The Institute of Occupational and Environmental Health has attended conferences on the subject in the U.S.S.R., in Copenhagen, Tokyo and Dresden. It has sent its representatives throughout the world to interview doctors conducting research in the field. It has assembled all available literature on the subject for evaluation and study. It has conducted two conferences in Antigua; the first in 1965 and the second in 1967, with some 40 scientists and research experts assembled from all over the world. The second Antigua conference covered the following agenda:

- 1) Inter-action between asbestos and biological systems.
- 2) Characteristics and control of environmental exposure.

- 3) Diseases related to asbestos in man, epidemiological studies.

The Institute is also sponsoring the following projects at the present time:

- 1) Epidemiological study of asbestos workers in Canada.
- 2) Dr. Vigliani's study of mill and insulation workers in Italy.
- 3) Dr. Palnar's study on the biological aspects of asbestos.
- 4) Drs. McDonald and Gibbs, chemical and mineralogical studies of Chrysotile fiber.
- 5) Dr. J. C. McDonald's study of biological effects of asbestos.
- 6) Studies of Dr. Nore and Dr. Dumont.

As a result of research work which has been done, as well as work that is now being carried on in Canada, in the U. S. and throughout the world, we are beginning to believe:

- 1) That there is a definite linkage between asbestos and lung health, which becomes manifest after long exposure (20 years).
- 2) That with insulation workers the effect of asbestos dust on diseases of the lungs is worse when the worker is a smoker.
- 3) That the effect is more severe in some industries than in others, particularly insulation workers and textile workers.
- 4) That the effect is greater with some types of asbestos fiber than with others, e.g., Crocidolite and Amphibols appear to be worse than Chrysotile.
- 5) That workers can be protected against exposure with beneficial results.

What we do not know is:

- 1) How effective protection is and where and when it is needed.
- 2) What is the allowable maximum concentration that can be tolerated.

May 2, 1968

- 3) What is there about asbestos that injures the cells and how are they injured.
- 4) How to best engineer to prevent injury.
- 5) How to evaluate and measure cause and effect.

We, in the Q.A.M.A., feel that we should continue our work with all diligence to learn more about the problem, to find the answers to questions which are unknown to us at the present time. To do this effectively will require extensive studies at considerable cost. To spread this cost over the largest possible base, we would like to see the efforts of the asbestos producers supplemented by help from the asbestos users and governmental agencies, if possible.

For an agenda for your proposed meeting of asbestos cement producers to be sponsored by the Mineral Fiber Products Bureau, I would suggest a simple agenda with an introduction by you as President of the Bureau, to be followed by a statement of the problem, including past history, present work, what has been done by others in this country and in Canada, and throughout the world in studying the problem, what is being done by the Q.A.M.A. and other agencies and what should be done in the future. I would suggest two speakers:

- 1) Karl Lindell, Chairman of the Executive Committee of the Institute of Occupational & Environmental Health and Chairman of the Board of Canadian Johns-Manville.
- 2) Dr. George Wright, Director of the Scientific Committee of the Institute of Occupational & Environmental Health and Head of Research at St. Luke's Hospital, Cleveland, Ohio.

These men should divide the subjects between them, and prepare the detailed agenda. If you have time to go further into steps being taken to control the hazard in asbestos cement plants, it might be desirable to expand the agenda and include someone familiar with the pipe plant and asbestos cement plant at Manville, N. J.

Since your meeting is being held in the Johns-Manville offices, and since they are doing more and spending more than anyone else in the industry on the problem, Mr. Burnett may have some helpful suggestions as to an agenda and as to clearing his men to cover specific subjects.

Mr. Albert H. Pay

- 5 -

May 2, 1968

I will be out of the country from May 15 to June 15. Please let me know if I can be of any further help to you before I go, or after I return.

Sincerely,

FLINTKOTE MINES LIMITED


J. A. Main

JAM:hl

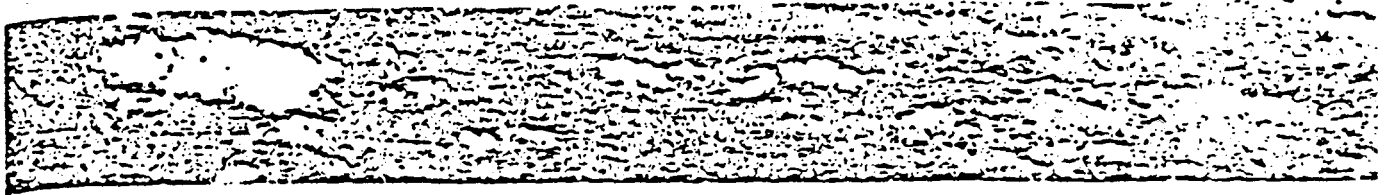
cc: Mr. M. C. Carpenter - Rutherford
Mr. J. D. Moran - New York

Target Health Hazards

ASBESTOS: AIRBORNE DANGER



REPRINTED FROM SAFETY STANDARDS
MAY-JUNE 1972



Target Health Hazards

Asbestos: Airborne Danger

by Nancy L. Nelson

Two thousand years ago when the first use of asbestos was recorded, it was a sacred object, a curiosity of kings and nobles, a magic mineral. The Greeks, who used asbestos for the wicks of their temple lamps, were enthralled when flames did not consume it, but burned unceasingly. Amazed, they called it *asbesta*, which meant the "unquenchable," the "inextinguishable."

Now that asbestos has been integrated into our industrial world—from fireproof drapery and floor tiles to the corrugated steel used in heavy construction—the term used by the Greeks has been found to apply to another attribute of this mineral. No cure now exists for the diseases caused by inhaling asbestos fibers: once established, these disorders, too, have so far proved to be inextinguishable.

In the last few years, asbestos has been recognized as one of the most hazardous of air contaminants in the workplace. Employees exposed to asbestos include an estimated 100,000 insulation workers, 50,000 workers in manufacturing products, 60,000 using end products, and uncounted thousands in construction. Labor unions have

pushed for stricter standards governing its usage, and the Occupational Safety and Health Administration has listed it as one of five target health hazards in a new program aimed to crack down on health hazards in the workplace.

Recent studies, such as those conducted by the Mount Sinai School of Medicine and the National Research Council, have produced some disturbing statistics on the mortality rates of workers using asbestos. Dr. Irving J. Selikoff of the Mount Sinai School of Medicine discussed the implications of these studies: "At present, one in every five deaths among insulation workers is due to lung cancer, one in ten to cancer of the pleura or peritoneum, one in ten to scarred lungs of asbestosis." Since insulation workers receive relatively light exposures to asbestos compared to some other occupational groups, these results are even more sombre.

What disturbs researchers about diseases linked to asbestos is that many cases they are presently encountering result from exposures dating back to the 1930's, when asbestos was not used as extensively as it is today. Thirty years ago world production was approximately 50,000 tons annually; today it has skyrocketed to 3 million tons. The effects of exposures occurring in the 1970's probably

Nancy Nelson is the assistant editor of SAFETY STANDARDS.

will not be known until the end of the century; but the high mortality rates of today suggest what may be expected in the future. If working conditions are not significantly altered, asbestos exposure can lead to 17,000 deaths from lung cancer, 10,000 deaths from cancer of the pleura and peritoneum, and 10,000 deaths from asbestosis, according to projections by Dr. E. Cuyler Hammond of the American Cancer Society.

The first case of asbestosis did not come under medical attention until 1900, 22 years after asbestos was mined on a large-scale basis. The victim, a British textile worker, had inhaled the asbestos dust stirred up by the carding machine he had operated for 14 years. Ten other men had been his co-workers in the carding room. All died before their thirtieth birthdays.

Since the recognition of asbestosis 72 years ago, the disease has been widely studied the world over, from the mines of South Africa to the mills of Quebec. Today experts believe that asbestosis is one of the most debilitating of the pneumoconioses—lung diseases caused by dust inhalation. Erupting 20 to 30 years after the exposure period, the disease exhibits no warning symptoms to mark its early stages. Many studies have uncovered cases of the disease in which the exposure was relatively light and did not continue over an extended period of time.

Although four varieties of asbestos are used commercially, chrysotile asbestos, mined primarily in Quebec, accounts for 95 percent of world production. Under high magnification, chrysotile fibers resemble fine polished wire or strands of silk. Strong, soft and flexible, they can be woven into fabric.

Chrysotile, however, is dangerous medically. When inhaled, the needle-like fibers become trapped in the lower bronchioles of the lungs. Normally, protective cells called phagocytes destroy



The asbestos worker mixing cement is partially protected by a respirator. The asbestos fibers in the air, however, endanger his fellow employees, just as his dust-laden clothes are a menace to his family. New OSHA standard requires that asbestos materials be used in closed containers.

"The effects of exposures occurring in the 1970's probably will not be known until the end of the century; but the high mortality rates of today suggest what may be expected in the future."

such irritants. But asbestos fibers are indestructible in lung tissue. The phagocytes form a heavy coating around the fibers. In time, a dumb-bell shaped structure known as a ferruginous body begins to form.

Asbestosis develops when the scar tissue that forms around asbestos fibers slowly spreads throughout the lung and pulls it out of shape. The working space for air exchange is reduced, and blood flowing through the lungs is not replenished with a sufficient amount of oxygen. Breathlessness becomes pronounced, and in advanced stages can be disabling. Other symptoms are loss of weight, coughing, weakness, and pain in the chest or between the shoulders. The strain on the heart caused by the lack of oxygen may cause heart failure.

Recent studies indicate that asbestos also may be a potent carcinogenic, or cancer-producing agent. A major stumbling block to researchers in establishing the connection between asbestos and cancer has been the length of time between exposure to the substance and the appearance of cancer symptoms. But in the last few years, studies have shown that workers exposed to asbestos die

of lung cancer at more than five times the expected rate. Although most cancers linked to asbestos develop in the lower portions of the lungs, where the concentration of fibers is heaviest, cancer may also develop in the gastrointestinal tract.

The peril of lung cancer from asbestos exposure is increased by smoking. Tests conducted by Selikoff and Hammond have shown that asbestos insulation workers who smoke have 90 times the incidence of lung cancer compared to smokers with no asbestos exposure.

Mesothelioma, formerly a rare cancer afflicting only one out of 10,000 people, is now appearing at an unprecedented rate. Researchers are linking it to asbestos exposure, however slight. This fatal cancer attacks the pleura (the membrane lining the lung and chest cavity) or the peritoneum (the lining of the abdominal cavity). In his study, Selikoff noted that 10 out of 124 deaths of insulation workers were caused by mesothelioma.

Workers in many occupations encounter serious asbestos exposures. Among the establishments most likely to have asbestos risks are those manufacturing asbestos textiles, valve packings, asbestos

Wrong: Spraying asbestos mixtures on steel girders releases vast amounts of asbestos dust into the atmosphere. Asbestos insulators who smoke have 90 times more lung cancer than smokers with no asbestos exposure.



"Since the recognition of asbestosis 72 years ago, the disease has been widely studied the world over, from the mines of South Africa to the mills of Quebec. Today experts believe that asbestosis is one of the most debilitating of the pneumoconioses—lung diseases caused by dust inhalation."

sheets, brake linings, boiler blankets, building materials and appliance cords.

Plasterers who spray an asbestos mix on the steel foundations of buildings have heavy exposures to asbestos. A thermal insulation and fireproofing agent, the asbestos mix prevents the steel from buckling in case of fire. Plasterers can apply it without interrupting construction activities, and the asbestos mixture hardens in eight hours without cracking or shrinking. Not only steel buildings, but ships and boats are treated in this manner.

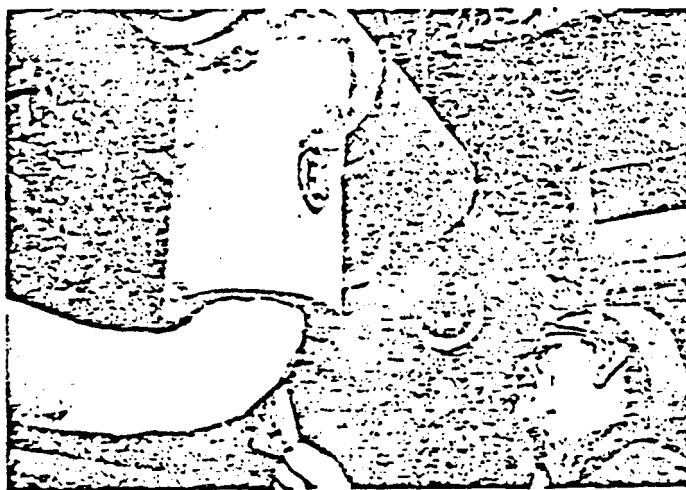
Now that asbestos has been recognized as a major health hazard, the alarming facts about this practice are being reviewed. Three million pounds of the fireproofing mixture, 30 percent of which is chrysotile asbestos, was sprayed in 1970. Twenty-five percent of the material sprayed does not adhere to the steel, but goes directly into the atmosphere. The plasterers manning the spray guns, as well as the construction workers toiling near-by, inhale excessive amounts of asbestos during this operation—up to 50 million fibers in an eight hour day. But the hazard does not end with construction. A large amount of asbestos is expected

to be set free during demolition of the buildings and ships treated in this manner.

Asbestos spraying has been banned in some cities, but continues unabated in others. The use of alternate methods of application—trowelling a wet mixture of asbestos on the foundation or wrapping insulation around the steel in the form of blankets—is being encouraged to reduce the hazard.

Brake mechanics must also cope with significant levels of airborne asbestos. Valuable because of its resistance to heat and its ability to withstand abrasive force, chrysotile asbestos makes up 50 percent of brake lining material. However, the friction breaks asbestos fibers away from the fabric. Many mechanics remove the asbestos fibers that have accumulated around the brake drums and assemblies with a compressed air hose. This produces a cloud of asbestos dust around the mechanic and anyone in his working area. Alternate cleaning methods are needed; for example, a vacuum cleaning device reduced the hazard in recent tests in England.

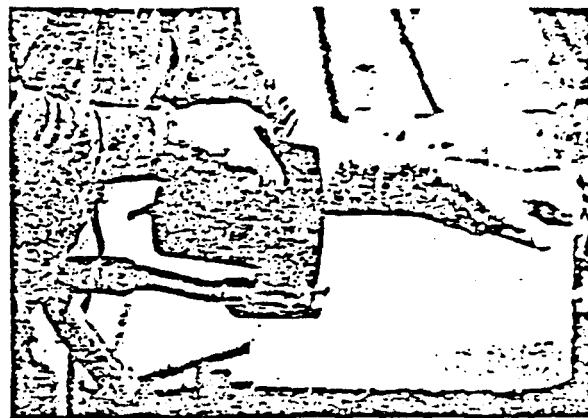
Insulation workers are the largest single occupational group to handle asbestos on the job. Their



Right: Trowelling a wet asbestos mix on pipes for insulation purposes effectively reduces the hazards.



Wrong: Sawing asbestos materials creates dust in the work environment. The respirator affords the employee some protection, but the accumulation of dust remains a threat to others on the worksite.



Right: A saw with a local ventilation system sucks up asbestos dust into a container. The OSHA standard specifies that hand or power-operated tools that produce asbestos dust must be equipped with local exhaust ventilation and dust collectors.

exposures, however, are relatively light. In most types of insulation, asbestos is used primarily as a binding agent and makes up only 15 percent of the material. Then, too, insulators working with asbestos on a daily basis are encouraged to take precautions: good housekeeping measures, tools equipped with local ventilation systems, and respirators for dusty work are safety precautions stressed by their union.

When insulation workers install materials containing a high percentage of asbestos, they often use a water spray on the cloth while unrolling it or uncovering it. Some insulation workers even cut asbestos on disposable tarpaulins in order to allow the excess material to be discarded without stirring up dust. This eliminates the need to sweep up insulation debris after a job. Usually a dusty process, sweeping is discouraged because it holds a risk for the workers still on the construction site.

Bricklayers, carpenters, sheet metal workers and boiler makers also install insulation at various times, but often they fail to take the precautions used by workers who handle asbestos on a daily basis. The licensing of workers who install insulation, much like the licensing of plumbers and electricians, has been suggested as a safeguard to insure that asbestos handlers are both informed and equipped to work safely.

Asbestos contamination holds an increasing threat to the general public. Both the dusty manufacturing processes and the spraying of structural steel emit vast amounts of asbestos fibers into the atmosphere, threatening those living near asbestos factories. Unsuspecting passers-by in the vicinity of construction sites or families of workers who return home with dusty clothing are among those exposed to this hazard.

The emergency OSHA standard for asbestos, issued on December 7, 1971, lowers the permissible concentration of asbestos fibers in the work atmosphere from 12 fibers to five fibers greater than five microns in length per milliliter. This is based on the average exposure during the eight-hour work day. Concentrations of asbestos that range from five fibers per milliliter to 10 are permissible for 15 minutes every hour, but the sum total of such exposure must not exceed five hours in an eight-hour work day.

The standard also lists engineering controls—enclosures, vacuum sweeping and local exhaust ventilation. When these measures are not feasible or do not reduce the asbestos concentration to permissible levels, the standard requires that workers be provided with personal protective devices. Protective respiratory devices must be worn by workers exposed to the spraying of asbestos, or

to the demolition of pipes, structures or equipment previously sprayed with asbestos.

The emergency standard requires that the employer check the respiratory devices for proper fit and train employees in their correct use. Periodic inspections, proper cleaning, repairing and storing of the respiratory devices are responsibilities of the employer.

The standard also specifies that hand or power-operated tools that produce asbestos dust—saws, scorers, abrasive wheels, and drills—must be equipped with local exhaust ventilation and dust collectors. When asbestos is mixed with other products—such as cement, mortar, grout or plastic—the mixing must be done in closed containers. Cleaning up the debris by dry sweeping or blowing it away is prohibited. Any accumulation of asbestos dust must be removed rapidly by vacuum cleaners. Asbestos waste must be disposed of in sealed containers.

The OSHA Standards Advisory Committee for Asbestos has recommended an exposure limit of two fibers greater than 5 microns in length per cubic centimeter. This proposal, based on a NIOSH criteria document, would not be effective for two years, in order to allow the installation of

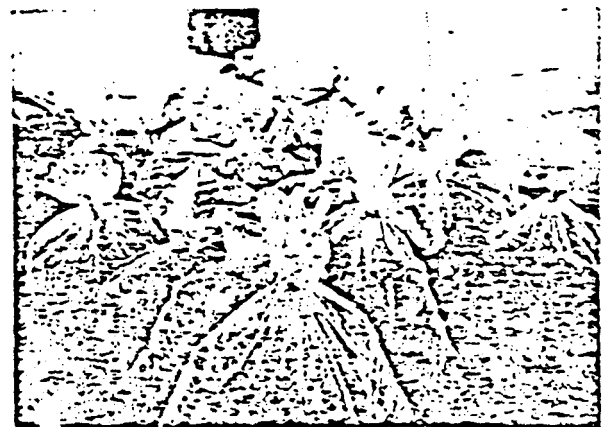
the necessary engineering controls. The committee, representing government, labor and industry, also suggested that the future standard include a program of comprehensive medical surveillance requiring pre-employment medical examinations of applicants, periodic medical evaluations of workers, and medical records to be kept by employers for the use of OSHA and NIOSH.

The research and mortality studies of today have tarnished the reputation of this magic mineral, once the object of fabulous tales. One legend revolves around the tablecloth of Charlemagne, the eighth-century ruler of the Holy Roman Empire. When the cloth woven from asbestos fibers was thrown into the flames, it was withdrawn not only intact, but whiter and cleaner than before. Charlemagne used this piece of "witchcraft" to mystify his guests as well as to intimidate his enemies in order to win psychological battles.

The jump from ancient legend to contemporary knowledge about asbestos is a tremendous advance—except in one area. Our ability to combat the disastrous effects of asbestos on the human system is still negligible. The mystery surrounding asbestos continues today, but the price is not in lost battles but in lost working lives. □

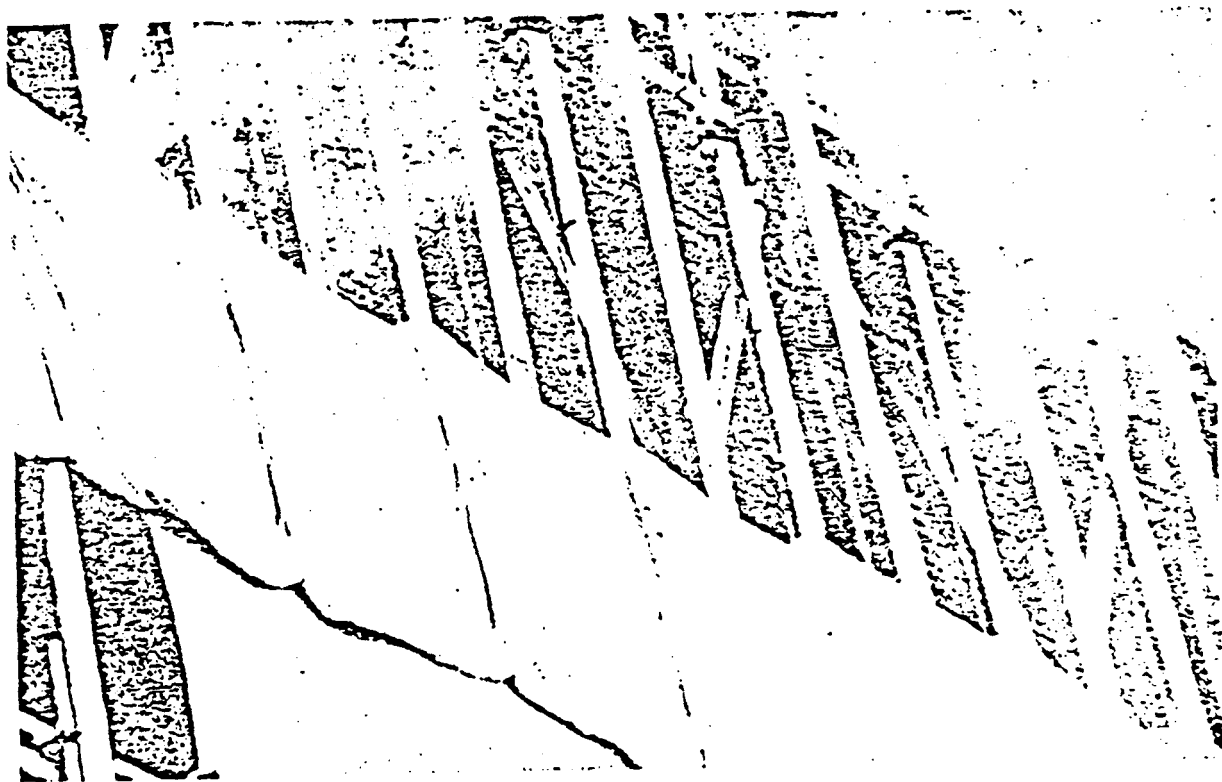


Wrong: Asbestos dust collects with other debris on a construction site. The cleaning and sweeping process raises clouds of asbestos dust, endangering the employees and the community.



Right: The new OSHA standard requires that asbestos debris be removed in closed containers or plastic bags.

A cloud of airborne asbestos descends on construction workers, unwary passers-by and persons living or working near the construction of this multi-story building. Asbestos has recently been recognized as a major health threat both in the workplace and in the community. The practice of spraying asbestos insulation on steel girders has been halted in some cities.



MEH SO-109-I.1 (x)

ASBESTOS AND HEALTH Information File

Enclosed is a General Information File on the subject of asbestos and health. You may find this File useful for background information concerning the nature of asbestos OSHA regulations, occupational disease, worker safety and health and the nature of asbestos.

The file contains five general fact sheets, in addition to medical papers and supplemental data on the subject of asbestos and health. You may wish to file other asbestos reference materials in the folder. Additional material will be available from time to time from AIA/NA. Please let us know if you wish to be continued on our mailing list and if we can be of further assistance to you.

- Part I Asbestos and Health
- Part II What Asbestos Is
- Part III Protecting the Asbestos Worker
- Part IV Asbestos and the General Public
- Part V Profile of the AIA/NA
- Part VI Medical Papers and Other Material

Asbestos Information Association/North America

1660 L Street, N.W. Washington, D.C. 20036

Robert H. Mereness
Executive Director

202/223-4085

THE FLINTKOTE COMPANY
EAST RUTHERFORD, N.J.

INTER-OFFICE CORRESPONDENCE

DATE November 15, 1968

TO Mr. H. P. Heubner
New York

FROM M. L. Johnson
Rutherford

SUBJECT: Safety Precautions-
Use of Asbestos Fibers

OFFICE OF THE SECRETARY

For some time now articles have been appearing in the New York Times, Wall Street Journal and other local publications, concerning the hazards of inhaling air entrained asbestos fibers. This subject was also a major subject of discussion at a meeting I attended this Spring at Johns-Manville's mine in Asbestos, Quebec. I do not feel it is necessary for me to go into detail as I discussed the subject with Mr. Knorr and his department is evidently well-informed in this matter.

In anticipation of more stringent regulations in the use of asbestos, we have allocated monies in our 1969 Capital Expenditure Plan to improve the dust control systems in our tile plants. The subject has been gone over thoroughly with the Tile Plant Managers and Engineering Staffs.

It had been my hope that significant improvements could be made in 1969 before attention was drawn to this subject. Mr. Main has now informed us that Johns-Manville propose to use a caution label on all bags of asbestos fiber. These labels will create a considerable amount of discussion among our employees who are exposed to asbestos and feel that their individual exposure may be harmful. In all probability this will work its way back to the unions and eventually back to us in future negotiations.

Inasmuch as the asbestos problem involves the health and welfare of our employees, it will also involve our insurance company.. As far as I can determine, what constitutes a hazard is a rather subjective matter at this time and no specific perimeters have been defined by the U.S. Government or local agencies which would give us objective goals to achieve in dust control. We therefore feel that direction and advice in this matter should come from your department.

Would you please make a study of our plants and provide us with objective goals to guide us in the engineering and installation of dust control equipment. We will continue with our engineering of improved dust control in our plants, but will not spend any money until we receive these goals from your department and a means of evaluating conformance.

MLJ/sm

cc Messrs. M. C. Carpenter, J. L. Tomaselli, J.A. Main,
W. N. Knorr, R.J. Carlson, G.G. Curry, J. D. Moran,
E. J. Weber, Jr.

