PLAINTIFF'S EXHIBIT
UC-5448

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

In re: Asbestos Products Liability Litigation	:	CIVIL ACTION NO. MDL 875
	:	
	:	
	:	
This Document Relates to:	:	
	:	
ALL CLAIMS BASED UPON UNION CARBIDE'S ALLEGED SUPPLY OF RAW ASBESTOS TO U.S. GYPSUM AND GEORGIA-PACIFIC AND GOVERNED BY TEXAS, OHIO, CALIFORNIA, FLORIDA, OR NEW YORK LAW	:	

AFFIDAVIT OF ANDREW McCAMPBELL GIBSON

STATE OF GEORGIA)
)
COUNTY OF FULTON)

1. My name is Andrew McCampbell Gibson

2. I voluntarily submit the information within this Affidavit and affirm that its contents are true and correct and are based upon my personal knowledge. If called upon to testify as to the matters stated herein, I could and would competently so testify.

3. I am above the age of twenty-one (21) and am laboring under no physical or mental infirmities.

4. I am a partner at Alston & Bird, LLP. Along with other lawyers at my firm, I represent Union Carbide Corporation in asbestos litigation and related matters.

5. Many companies that have been affected by asbestos claims and related litigation maintain document repositories. The document repositories contain documents that the companies collected from their business records that pertain to the companies' involvement with

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asbestos. These documents often include, but are not necessarily limited to, invoices reflecting the purchase or sale of raw asbestos or asbestos-containing products, shipping receipts reflecting the delivery or receipt of raw asbestos and asbestos-containing products, formulations for products that contain asbestos, and correspondence and literature regarding asbestos and its use.

6. Georgia Pacific Corporation ("GP") maintains a document repository. The GP repository is maintained at the law offices of Nelson, Mullins, Riley & Scarborough, LLP at 999 Peachtree Street, Atlanta, Georgia and at another location off-site from Nelson, Mullins' offices.

7. U.S. Gypsum ("USG") also maintains a document repository. The USG repository is maintained at USG's headquarters located at 125 South Franklin, Chicago, Illinois.

8. I, and other lawyers under my supervision, reviewed documents at the GP and USG repositories, and identified many documents for copying. Except as explained in paragraphs 41 though 44 below, the documents identified below and attached hereto as Exhibits are true and correct duplicates of the original documents (as indicated in the descriptions below), found in the USG and GP document repositories, with the exception that Bates Numbers were affixed to the documents found in the GP repository.

Documents Found In The USG Repository

9. Attached hereto as Exhibit A is a true and correct copy of a Toxicology Report prepared by Union Carbide, dated May 8, 1969, found in the USG repository. Bates Number: CS006 0049-0050.

10. Attached hereto as Exhibit B is a true and correct copy of an August 17, 1936 letter from USG to its outside counsel, found in the USG repository. Bates Number: GP053 1180.

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11. Attached hereto as Exhibit C is a true and correct copy of a 1943 USG Operating Bulletin entitled "Elimination of Dusty Conditions," found in the USG repository. Bates Number: 0P001 0298-99.

12. Attached hereto as Exhibit D is a true and correct copy of USG's 1954 amended Operating Bulletin entitled "Elimination of Dusty Conditions," found in the USG repository. Bates Number: 0P001 0295-0297.

13. Attached hereto as Exhibit E is a true and correct copy of a 1948 document listing "Hazardous Chemicals Used in Paint Manufacture," found in the USG repository. Bates Number: 0P001 0316-0321.

14. Attached hereto as Exhibit F is a true and correct copy of a January 12, 1966 letter from E. Maynard to Mr. Morris, found in the USG repository. Bates Number: CS006 0564-0565.

15. Attached hereto as Exhibit G is a true and correct copy of a December 14, 1970 USG memorandum regarding "Hazardous Labelling [sic] – Joint Compounds," found in the USG repository. Bates Number: GP036 2053-2054.

16. Attached hereto as Exhibit H is a true and correct copy of a June 11, 1970 USG memorandum regarding "Asbestosis Hazard," found in the USG repository. Bates Number: CS007 1552.

17. Attached hereto as Exhibit I is a true and correct copy of a July 30, 1971 USG memorandum from Mr. Kipp to Mr. Entz, found in the USG repository. Bates Number: GP024 0136.

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18. Attached hereto as Exhibit J is a true and correct copy of an August 18, 1971 USG memorandum from Mr. Entz to Mr. Kipp, found in the USG repository. Bates Number: GP024 1076.

19. Attached hereto as Exhibit K is a true and correct copy of an October, 1972 USG memorandum from C. M. Howard, Jr., found in the USG repository. Bates Number: GP028 1518-1519.

20. Attached hereto as Exhibit L is a true and correct copy of an August 15, 1973 letter from the Secretary of the Gypsum Association's "Special Committee on Asbestos in Joint Treatment Compound" to the Committee's members, found in the USG repository. Bates Number: GP036 2038-2041.

21. Attached hereto as Exhibit M is a true and correct copy of an August 17, 1973 USG memorandum authored by K.S. Freeman regarding "Caution Labels for Joint Compounds," found in the USG repository. Bates Number: GP034 1609-1610.

Documents Found In The GP Repository

22. Attached hereto as Exhibit N is a true and correct copy of an October, 1968 Union Carbide brochure found in the GP repository. Bates Number: GP 013011-3016.

23. Attached hereto as Exhibit O is a true and correct copy of a GP memorandum between G.E. Wilson and C.W. Lehnert dated May 7, 1970, found in the GP repository. Bates Number: GP 008241.

24. Attached hereto as Exhibit P is a true and correct copy of a GP memorandum dated June 3, 1970, found in the GP repository. Bates Number: GP 008250.

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25. Attached hereto as Exhibit Q is a true and correct copy of a June 9, 1970 letter from GP's M. F. Fink to F. J. Rogers of the Gypsum Association Safety Committee, found in the GP repository. Bates Number: GP 008252.

26. Attached hereto as Exhibit R is a true and correct copy of a July 27, 1971 memorandum from M.F. Fink to all GP plant managers, found in the GP repository. Bates Number: GP 008261-62.

27. Attached hereto as Exhibit S is a true and correct copy of a letter dated September 24, 1971 from National Gypsum Company's Vice President for Research and Marketing to GP's President, W.H. Hunt, found in the GP repository. Bates Number: GP 008257.

28. Attached hereto as Exhibit T is a true and correct copy of a letter dated October 7, 1971 from GP's C.W. Lehnert to GP's President, W.H. Hunt, found in the GP repository. Bates Number: GP 008267.

29. Attached hereto as Exhibit U is a true and correct copy of the minutes from the April 5, 1972 Annual Meeting of the Gypsum Association, found in the GP repository. Bates Number: GP 008319-20.

30. Attached hereto as Exhibit V is a true and correct copy of a memorandum dated November 20, 1972, circulated by GP's W.N. Gettel, found in the GP repository. Bates Number: GP 008417-18.

31. Attached hereto as Exhibit W is a true and correct copy of a June 19, 1973 GP memorandum from C.W. Lehnert to John Woodsmall, found in the GP repository. Bates Number: GP 009365-66.

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32. Attached hereto as Exhibit X is a true and correct copy of a letter dated June 11, 1973 from the Gypsum Association to, among others, GP's G.E. Wilson, found in the GP repository. Bates Number: GP 008528-29.

33. Attached hereto as Exhibit Y is a true and correct copy of a draft letter dated June 29, 1973 sent by C.W. Lehnert to O.E. Burch for distribution to the sales force, found in the GP repository. Bates Number: GP 008771.

34. Attached hereto as Exhibit Z is a true and correct copy of a GP memorandum dated August 14, 1973 from E.D. O'Neill to C.W. Lehnert referencing the Gypsum Association Special Committee on Joint Compound Hazards meeting in Chicago, Illinois on August 8, 1973, found in the GP repository. Bates Number: GP 009020-23.

35. Attached hereto as Exhibit AA is a true and correct copy of a November 19, 1973 report, entitled "Evaluation of Exposure to Asbestos During Mixing and Sanding of Joint Compounds," found in the GP repository. Bates Number: GP 009208-20.

36. Attached hereto as Exhibit BB is a true and correct copy of an August 17, 1973 GP memorandum from one of GP's senior executives, G.E. Wilson, found in the GP repository. Bates Number: GP 009039.

37. Attached hereto as Exhibit CC is a true and correct copy of a May 17, 1974 GP memorandum from O.E. Burch to G.E. Wilson, found in the GP repository. Bates Number: GP 009267-68.

38. Attached hereto as Exhibit DD is a true and correct copy of a June 4, 1974 GP memorandum, found in the GP repository. Bates Number: GP 009452.

39. Attached hereto as Exhibit EE is a true and correct copy of a June 7, 1974 GP memorandum, found in the GP repository. Bates Number: GP 009271.

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40. Attached hereto as Exhibit FF is a true and correct copy of a June 10, 1974 GP memorandum from C. W. Lehnert to Ed Sing, found in the GP repository. Bates Number: GP 009462.

Additional Documents

41. Attached hereto as Exhibit GG is a true and correct copy of a document obtained from a database maintained by Baron & Budd, a law firm that represents plaintiffs in asbestos cases, which purports to be an August 13, 1936 memorandum from USG's General Services Manager to W.L. Keady, Vice President of USG.

42. Attached hereto as Exhibit HH is a true and correct copy of a document obtained from a database maintained by Baron & Budd, a law firm that represents plaintiffs in asbestos cases, which purports to be a December 14, 1973 USG memorandum circulated by J.N. Walker.

43. Attached hereto as Exhibit II is a true and correct copy of a document obtained from a database maintained by Baron & Budd, a law firm that represents plaintiffs in asbestos cases, which purports to be the minutes from a September 20, 1966 meeting of the Gypsum Association Safety Committee.

44. Attached hereto as Exhibit JJ is a true and correct copy of a document obtained from a database maintained by Baron & Budd, a law firm that represents plaintiffs in asbestos cases, which purports to be the minutes from a September 19, 1967 meeting of the Gypsum Association Safety Committee.

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I DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF GEORGIA THAT THE FOREGOING IS TRUE AND CORRECT.

Executed this 25th day of February, 2003 in Atlanta, Fulton County, Georgia.

Andrew McCampbell Gibson

ANDREW McCAMPBELL GIBSON

Sworn to and subscribed
before me this 25th day
of Feb., 2003.

Lisa C Francis
Notary Public
My Commission Expires:

September 9, 2003

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NAME OF COURT

_____, Plaintiffs, v. _____, Defendants.	NO. _____ **AFFIDAVIT OF A. McCAMPBELL GIBSON IN SUPPORT OF DEFENDANT UNION CARBIDE'S MOTION FOR SUMMARY JUDGMENT** **(ORAL ARGUMENT REQUESTED)**

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **Affidavit of Andrew McCampbell Gibson** has been furnished by facsimile and U.S. Mail to all other counsel of record on the attached Service List, this ____ day of _____, 2003.

_____

CHDB03 8959587.1 022403 1441C 02978237

UNION CARBIDE THE DISCOVERY COMPANY

Calidria ASBESTOS

ASBESTOS TOXICOLOGY REPORT

It has been known for years that some persons working in asbestos production were prone to develop a disabling lung disease. In time, this condition became known as asbestosis and was related to exposure to high concentrations of asbestos dust. With further experience, it was found that men could work with asbestos without development of lung disease if dust concentrations were kept below a certain level.

It has been generally accepted that a worker will not develop asbestosis if he is exposed to no more than 5 million particles per cubic foot of air, even if this exposure continues for his entire working lifetime. Although no cases of asbestosis are known to have occurred when exposures have been maintained at or below this level, the ACGIH (which sets the threshold limit value (TLV) in the U. S. A.) has indicated they intend to lower the TLV for asbestos to 2 million particles per cubic foot in an effort to increase the safety factor incorporated in the limit. The U. S. Department of Labor has already issued a regulation under the Walsh-Healy Act placing the TLV for asbestos at 2 million particles per cubic foot for public contracts in which they have jurisdiction. This concentration of dust is generally not visible in the average work area unless a beam of light causing a Tyndall effect is present. Usually the dust concentration must be from 8-10 million particles per cubic foot (MPPCF) before its presence is visible in average lighting conditions.

Several years ago, it was reported that there was an increase in the incidence of cancerous tumors, especially of the lung, associated with asbestosis. Recently there have been reports of some cancers occurring in individuals exposed to asbestos dust, but who have not developed clinical asbestosis. It is believed by most authorities that these cases have been associated with exposures significantly exceeding the Threshold Limit Value.

A type of cancer named mesothelioma has been noted to be associated with asbestos exposure in recent years. These tumors, while rather few in number to date, may occur in individuals with histories of only slight exposures, and that as much as twenty to forty years earlier. There is considerable evidence that crocidolite is most frequently associated with mesotheliomas. From the data available it appears that the TLV of 5 MPPCF may not be low enough to protect against mesothelioma. Research on the problem continues.

C0006 0049

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Control of asbestos dust exposure is therefore necessary. The control methods are the standard ones applicable to a variety of dusty operations. They include closed flow systems, wet processes where possible, and adequate exhaust ventilation where openings in the system are necessary. Pelletizing is sometimes used to improve the handling characteristics of otherwise dusty materials. Where satisfactory containment to stay within the Threshold Limit Value is impractical or impossible, efficient and reliable respirators are available for the protection of the employee. A program of environmental monitoring is highly desirable to determine that Threshold Limit Values are not being exceeded. In manufacturing industries it would be desirable to know the dust concentrations where the asbestos is dumped from bags into the process. Concentrations should also be determined where dusting occurs in finishing products. While initial dust determinations should be made at frequent intervals, once the level has been established as satisfactory, the frequency may be extended to occasional tests to assure continuation of a satisfactory condition.

Pre-employment and periodic physical examination of workers are desirable. These should include chest X-rays to insure that the worker has no chest condition prior to work with asbestos and to determine that no lung changes are resulting from work with asbestos.

It is believed that the addition of asbestos at the proposed levels during the manufacture of products would be harmless to the consumer. Total dusting would have to be well in excess of any levels acceptable to the consumer for the asbestos concentrations to approach the Threshold Limit Value.

In conclusion, while asbestos dust in excess of the Threshold Limit Value is potentially harmful, as are many other dusts encountered in industry, it is as readily controlled as other such dusts and it can be used safely with appropriate precautions.

Industrial Medicine And
Toxicology Department
Union Carbide Corporation

5/8/69

C5006 0050

UNITED STATES GYPSUM COMPANY

300 WEST ADAMS STREET

CHICAGO

US

SCOTT, MAC LEISH & FALK

August

RECEIVED

AUG 18 1936

Referred to _____

Answered _____

Scott, MacLeish & Falk,
134 South La Salle Street,
Chicago, Illinois.

Attention: Mr. C. M. Price

SUBJECT: Dust Survey - Jersey City

Gentlemen:

We are attaching for your information a copy of Dr. Gardner's report, giving the results of his dust survey at Jersey City, and also a report in connection with the examination of the X-rays of about 200 men at the Jersey City plant.

It appears that we have a very hazardous dust condition at Jersey City, and also have a problem with a number of men who now have asbestosis and tuberculosis.

We are taking the necessary steps to provide dust collecting and ventilating equipment, and in the meantime will provide respirators to minimize the dust hazard.

The real problem we have for consideration is that of deciding what to do about the men who now have an occupational disease. If some of those men who have asbestosis should make claim against the company and receive an award, would the United States Gypsum Company have to stand the entire expense or could part of it be prorated to the former owners of the Jersey City plant?

I am attaching a copy of my letter of August 13th to Mr. Keady, summarizing some of the more important points in the report. We realize, of course, that the management of our company must make the final decision as to what action we shall take on notifying the men who have been examined and who have been found to have asbestosis, tuberculosis, or some other disease. We shall also have to come to some decision in connection with the continuation of the employment of our men who have an occupational or other disease, but we would appreciate your advice in this connection since you will, of course, have in mind the legal consideration.

Yours very truly,

UNITED STATES GYPSUM COMPANY

T. F. [illegible]

Operating Division GENERAL ORDER Vice Pres.-Operations	ELIMINATION OF DUSTY CONDITIONS	No. 2-5 Date 8-24-43 Page 1 of 2 Cancels Page 1 Dated 4-1-43

LAWS AND REGULATIONS

Plant Managers shall be familiar with state and local regulations concerning ventilation and dust elimination, and shall promptly notify their Production Manager of any violations, outlining the changes in equipment or methods necessary for full compliance.

Where elimination of dust is impossible under existing conditions, authority requests for dust collecting equipment shall be prepared and submitted to Production Manager.

REQUIRED PRECAUTIONS

Plant Managers are responsible for seeing that the following precautions are taken to eliminate extremely dusty conditions and should endeavor to avoid employing individuals previously exposed to hazardous dust concentrations:

Good ventilation shall be maintained in all working areas and cleanup work handled in a manner which will not greatly increase dust concentration.

Dust collecting equipment shall be regularly inspected and maintained, following instructions issued by the manufacturer.

Bates packers shall be kept tight and if necessary to avoid excessive dust, shall be equipped with hood and collector.

Conveying, elevating and mixing equipment shall be so maintained that they are not sources of excessive dust.

Men exposed to high concentrations of dust on infrequent jobs such as mixer clean-out, screening retarder, shaking out bags, sweeping or cleaning under very dusty conditions, etc., shall be required to wear respirators.

/ Buhr stone dressing operations shall be provided with equipment for removing the dust at the point of operation. The collector shall be a Ruemelin or equivalent type, which provides suction at the dressing tool and removes the dust from the surface of the stone. The dust drawn into the collector must be discharged into an arrestor. Workmen engaged in dressing buhr stones are required to wear goggles and respirators.

It is recommended that before any applicant for employment is hired, the history of his previous employment be fully developed. If there is a questionable history of exposure to asbestos or silica dust, or an indicated partial lung disability such as tuberculosis, the applicant should not be employed until satisfactorily passing a medical examination. Such a medical examination shall include the taking of chest X-Rays and their interpretation by Saranac Laboratories as set forth in Bulletin 4-5.

/ It is further recommended that the occupational history of all applicants for employment be fully recorded on Employment Data and Application card, Form 1614 - 5/43 Rev., and this card become a part of the permanent employment record of all applicants hired. The procedure recommended in this and the preceding paragraph is a definite requirement at the East Chicago shingle plant, and at Oakfield.

/ Indicates change.

OP001 0298

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RESPIRATORS

With the exception of lime plants, where the Martindale Protective Mask is satisfactory, only respirators approved by the Bureau of Mines may be purchased and used for protection against dust.

The following respirators have received the Bureau of Mines' approval for non-poisonous dust, but must not be used for protection against poisonous gases, or where the hazard is lack of oxygen:

M.S.A. Dustfoe
M.S.A. Comfo
American Optical #R-1000
American Optical #R-9100
Willson #200
Willson #750
Chicago Eye Shield #94

Care of Respirators - Respirators shall not be interchanged between employees and shall be sterilized regularly by one of the following methods and before reissue to another employee:

a. Wash rubber and metal parts with soap, brush, and warm water and sterilize by immersion for 10 minutes in a solution of formaldehyde (one part of 40 per cent formaldehyde solution and 9 parts of water.)

b. Wash rubber and metal parts with soap and water, and sterilize in a 3 per cent solution of carbolic acid, a 2 per cent solution of lysol, or a 70 per cent solution of denatured alcohol.

c. Subject respirator to sterilization in a moist atmosphere of antiseptic gas, preferably formaldehyde, for a period of 10 minutes at room temperature.

After sterilization respirators should be rinsed in water and dried. Filter, felt screens and lastic head bands shall always be removed before sterilization.

DP001 0299

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Operating Division GENERAL ORDER Approved: EWD	ELIMINATION OF DUSTY CONDITIONS	No. 2-5 Date 2-11-54 Page 1 of 3 Cancels Page 1 Dated 8-24-43

ENGINEERING

Installations of operating equipment in all plants shall be so designed and installed as to meet or exceed any state requirement on ventilation and dust control. The Works Manager shall immediately notify his Production Manager in the event of any non-compliance of ventilation or dust control laws, outlining his recommendations for changes in equipment or design or methods necessary for full compliance with the state or local regulations.

Where the control of dust is impossible with existing plant facilities, authority request for dust-collecting equipment shall be prepared and submitted to the Production Manager.

REQUIRED PRECAUTIONS

Works Managers shall ascertain that the following precautions are taken to eliminate or prevent extremely dusty conditions and shall likewise avoid employment of individuals previously exposed to hazardous dust concentrations:

Adequate ventilation shall be maintained in all work areas. Clean-up work shall be handled in a manner which will not greatly increase dust concentration.

Dust-collecting equipment shall be regularly inspected and maintained following instructions issued by the manufacturer. Such equipment, when installed, shall be of such capacity as to control the maximum anticipated concentrations of dust.

Bates packers shall be kept tight and, if necessary equipped with hood and collector.

Conveying, elevating and mixing equipment shall be so maintained that they are not sources of excessive dust.

Buhr stone dressing operations shall be provided with adequate equipment for removing dust at point of operation. The collector shall be of a type which provides suction at the dressing tool and removes the dust from the surface of the stone. The dust drawn into the collector must be discharged into an arrestor. Workmen engaged in dressing of buhr stones are required to wear goggles and respirators.

BRICKLAYERS

Employees required to regularly handle fire brick containing a high percentage of free silica shall be required to wear adequate respiratory equipment.

CP001 0295

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Asbestos Exposure

Operations involving manual handling of asbestos in any plant shall be considered in an area in which employees shall be required to wear adequate respiratory equipment.

Pre-Employment Physical Examinations

Before any applicant for employment is hired, the history of his previous employment should be fully developed. If there is a questionable history of exposure to asbestos or silica dust, or an indicated partial lung disability such as tuberculosis, the applicant shall not be employed in any plant until he satisfactorily passes an X-ray examination.

The occupational history of all applicants for employment should be fully recorded on Employment Data and Application Card, Form 1614 - 12/52 Revised, for all applicants hired.

RESPIRATORS

Only respirators approved by the United States Bureau of Mines may be purchased and used for protection against injurious dusts. In other locations it may be well to provide Martindale Protective Masks to employees to minimize the inhalation of nuisance dusts.

Employees exposed to high concentrations of dust on infrequent jobs such as mixer clean out, screen retarder, sweeping or cleaning under very dusty conditions, etc., shall be required to wear an approved filter-type respirator.

A complete list of such respirators, entitled "List of Respiratory Protective Devices Approved by Bureau of Mines", Information Circular No. 7636, is available at no cost from the United States Department of Interior Bureau of Mines, Washington, D. C.

Care of Respirators

Respirators shall not be interchanged among employees and shall be washed and sterilized by one of the following methods before reissue to the same employee: (NOTE: Remove filter units before sterilizing and washing.)

1. Immerse respirator in a 1-to-2-per cent solution of creosol. Rinse thoroughly and allow to dry.

UP001 0296

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Operating Division GENERAL ORDER Approved: CWDK	ELIMINATION OF DUSTY CONDITIONS	No. 2-5 Date 2-11-54 Page 3 of 3
		Cancels Dated (New)

2. Immerse respirator in alcohol in strength of 75% or more. Avoid alcohol that is denatured with poisonous or irritating substances, unless the respirator is thoroughly rinsed after sterilizing.

3. Place the respirator in a moist atmosphere of antiseptic gas, such as formaldehyde. This must be done in a tight cabinet.

4. Immerse respirator for 10 minutes in a solution of Formalin, then rinse. The solution can be made by mixing 1 part of 40% formaldehyde in 9 parts of water.

5. Immerse respirator in boiling water or live steam for 5 minutes. (NOTE: Repeated immersions in boiling water or steam will harden rubber parts of the respirator.)

Prior to sterilizing the respirators, it is well to wash the rubber and metal parts with soap, brush and warm water and rinse thoroughly.

EXPLOSIVE DUSTS

Dust which has an explosion or flash fire potential such as coal, wood, paper, starch, etc., shall be adequately controlled, arrested and removed to eliminate or minimize the possibility of an explosion or flash fire. Refer all questions concerning explosive dusts and their control to Department 186 - Tax and Property Department, Chicago Office.

OP001 0297

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HAZARDOUS CHEMICALS
Used in Paint Manufacture

No. 602
Date 9-3-48
Page 2 of 4
Cancels NEW
Dated

Compound	Hazard	Precautions	Treatment after contact or exposure
Chromic fluoride	Irritating to skin and mucous membranes, with possible ulceration. Toxic if taken internally, but systemic poisoning in industry is rare.	Avoid contact with the material, using personal protection when needed. Inhalation of any of this dust must be avoided and local exhaust ventilation used when any amounts of the material are handled. Respiratory protection can be used for short exposures, but respirators must be kept cleaned. Maximum allowable concentration 1 milligram per 10 cubic meters of Air.	Chrome produces dermatitis and ulceration - treatment by a physician. Protective ointments. Fluorine produces fluorosis with eventual calcification of ligaments.
Isopropyl alcohol Denatured alcohol	Gastric disturbances if taken internally. Vapors not toxic but can have narcotic action.	Maximum allowable concentration for propanol about 400 parts per million parts of air. Denatured alcohol would be slightly higher. Good general room ventilation generally sufficient.	Gastric lavage for internal treatment - fresh air or oxygen for inhalation.

OP001 0316

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asbestosclaims.law/library/19881/18

Operating Division INFORMATION BULLETIN Approved:	HAZARDOUS CHEMICAL Used in Paint Manufacture	No. 602 Date 9-15-66 Page 1 Cancels Page 1 Dated 9-3-48

This bulletin is being reissued on a temporary basis to allow one year for appropriate people to update information contained herein. Obsolete material is of a detrimental value unless labelled as such. If no revisions are approved or circulating THIS BULLETIN EXPIRES without further notices AS OF 9-15-67.

Compound	Hazard	Precautions	Treatment after contact or exposure
Ammonia water	Irritation of the eyes and respiratory passages from the gas.	Maximum allowable concentration 100 parts per million parts of air.	Anesthetic ointment for eyes - sedative cough syrup for respiratory irritation - Oxygen inhalations if severe.
	Men cannot work in concentrations that are dangerous for it is too irritating.	Local exhaust ventilation should be used over any mixing tanks.	
	Accidental breakage of storage tanks can be serious to personnel.	Storage tanks should not be inside of buildings.	
Asbestos	Inhalation of the dust for long periods of time can produce a disabling lung condition called asbestosis.	Not to be handled in confined areas without local exhaust ventilation at the point of handling.	Asbestos "warts" on hands due to asbestos fibres penetrating skin - fibre must be completely removed.
		Intermittent handling for short periods may be done in open areas with good general room ventilation.	Asbestosis - lungs should be x-rayed periodically.
		Dust counts should be less than 5 million at such operations (1 million on a count of asbestos alone, not including the other dust present.	
Chrome alum	Irritating to skin and mucous membranes	Avoid contact with the material using personal protection when needed.	No systemic effect - locally a dermatitis - protective ointments - if ulceration develops, treatment by a physician.
		Avoid breathing of dust.	

EXPIRED

OP001 0317

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HAZARDOUS CHEMICALS

Used in Paint Manufacture

No. 602
Date 9-3-48
Page 2 of 4
Cancels NEW
Dated

Compound	Hazard	Precautions	Treatment after contact or exposure
Chromic fluoride	Irritating to skin and mucous membranes, with possible ulceration.	Avoid contact with the material, using personal protection when needed.	Chrome produces dermatitis and ulceration - treatment by a physician. Protective ointments. Fluorine produces fluorosis with eventual calcification of ligaments.
	Toxic if taken internally, but systemic poisoning in industry is rare.	Inhalation of any of this dust must be avoided and local exhaust ventilation used when any amounts of the material are handled. Respiratory protection can be used for short exposures, but respirators must be kept cleaned.	
		Maximum allowable concentration 1 milligram per 10 cubic meters of Air.	
Isopropyl alcohol Denatured alcohol	Gastric disturbances if taken internally.	Maximum allowable concentration for propanol about 400 parts per million parts of air. Denatured alcohol would be slightly higher.	Gastric lavage for internal treatment - fresh air or oxygen for inhalation.
	Vapors not toxic but can have narcotic action.	Good general room ventilation generally sufficient.	

OP001 0318

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Operating Division
INFORMATION BULLETIN
Approved:

HAZARDOUS CHEMICAL
Used in Paint Manufacture

No. 602
Date 9-3-48
Page 1 of 4
Cancels NEW
Dated

Compound	Hazard	Precautions	Treatment after contact or exposure
Ammonia water	Irritation of the eyes and respiratory passages from the gas. Men cannot work in concentrations that are dangerous for it is too irritating. Accidental breakage of storage tanks can be serious to personnel.	Maximum allowable concentration 100 parts per million parts of air. Local exhaust ventilation should be used over any mixing tanks. Storage tanks should not be inside of buildings.	Anesthetic ointment for eyes - sedative cough syrup for respiratory irritation- Oxygen inhalations if severe..
Asbestos	Inhalation of the dust for long periods of time can produce a disabling lung condition called asbestosis.	Not to be handled in confined areas without local exhaust ventilation at the point of handling. Intermittent handling for short periods may be done in open areas with good general room ventilation. Dust counts should be less than 5 million at such operations (1 million on a count of asbestos alone, not including the other dust present.	Asbestos "warts" on hands due to asbestos fibres penetrating skin - fibre must be completely removed. Asbestosis - lungs should be x-rayed periodically.
Chrome alum	Irritating to skin and mucous membranes	Avoid contact with the material using personal protection when needed. Avoid breathing of dust.	No systemic effect - locally a dermatitis - protective ointments - if ulceration developes, treatment by a physician.

OP001 0319

Union Carbide trial exhibit UC-5448: Affidavit of Andrew McCampbell Gibson (Alston & Bird) Authenticating U.S. G...
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HAZARDOUS CHEMICALS
Used in Paint Manufacture

No. 602
Date 9-3-48
Page 4 of 4
Cancels NEW
Dated

Compound	Hazard	Precautions	Treatment after contact or exposure
Sodium oxalate Ammonium oxalate	Local irritation to the skin from handling. Irritation to the mucous membranes when dust is inhaled. Strong poison when taken internally.	Careful handling of these materials is generally sufficient protection. Local exhaust ventilation should be provided for dry grinding operations. Respiratory protection should be used where the material is dusty, and exposure is short.	Gastric lavage for internal treatment. Protective ointments for skin. Careful washing of eyes with blend collyrium for conjunctivitis
Sodium pentachlorphenate Sodium tetrachlorphenate Ortho-phenylphenol	These materials are skin irritants which can cause a troublesome dermatitis. They are toxic on inhalation and ingestion.	Contact with the powdered materials or solutions should be avoided and the use of protective clothing when handling large quantities is advisable. Local exhaust ventilation is advisable if dust is present throughout a working day. Respiratory protection can be used for short exposure periods.	Wash off spillage with soap and water.
Sodium stannate	Caustic material which is irritating to the skin. Irritation to eyes and nasal passages from dust.	Avoid contact with this material. Washing facilities should be near the operation. Respiratory protection against dust.	Personal hygiene - protective ointments.

OP001 0320

Union Carbide trial exhibit UC-5448: Affidavit of Andrew McCampbell Gibson (Alston & Bird) Authenticating U.S. G...
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Operating Division INFORMATION BULLETIN Approved:	HAZARDOUS CHEMICALS Used in Paint Manufacture	No. 602 Date 9-3-48 Page 3 of 4 Cancels NEW Dated

Compounds	Hazard	Precautions	Treatment after contact or exposure
Lead driers Cobalt driers Manganese driers	Irritation to skin of some people. Systemic intoxication from handling of these materials in industry is rare.	Keep contact with these materials at a minimum using protective clothing where necessary.	Wash off spillage with soap and water.
Mica	Indications that mica can cause a lung pathology from inhalation of the dust over long periods of time.	Good general room ventilation is generally sufficient except at grinding operations. Mica dust in air is misleading and it will appear to be worse than it actually is for the dust particles are quite noticeable. Dust counts should be kept below 20 million.	Periodic x-ray of chest for silicatosis.
Sodium hydroxide	Can cause severe caustic burns on the skin. Strong irritation of nasal passages from dust or mist.	Protective clothing needed when handling large amounts. Washing facilities should be near the operations. Respiratory protection needed if large amounts of dust in working area.	Produces caustic burns which are slow to heal. Water soaking of burn as soon as possible. Then sterile dressings - no neutralization to be permitted.

OP001 0321

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File
J-2-Gen.

January 12, 1966

Mr. Morris
CAMPBELL SOUP COMPANY
2550 - W. 35th Street
Chicago, Illinois

Dear Mr. Morris:

Per our phone conversation, the information below and the attached Data Sheet for Toxicological and Safe Handling Information should give you what is required on our Perf-a-Tape Joint Compounds.

The compounds contain mica and asbestos, both of which can be hazardous if inhaled over a long period of time. This dust hazard would necessarily occur only while the compounds are being mixed with water. Such mixing takes only a very small part of the total use time, whether it occurs all at once or intermittently during the working day. A simple dust respirator and protective goggles make adequate protective equipment even if there is not adequate ventilation. Once the compound has been mixed with water the dust problem is naturally eliminated.

The wet compound is mildly alkaline from ammonia. Some persons may find the odor annoying or irritating, and possibly someone with extremely sensitive skin might even suffer some skin irritation from direct contact but such occurrences are very rare. Normal personal cleanliness prevents any ill effects; only the most sensitive people would not find this to be adequate protective action. Obviously, if the compound got in a person's eye, immediate flushing with clear water is indicated.

The only volatiles in the compounds are ammonia and an industrial perfume, which is used in trace amounts. The ammonia is not present in an amount that would be hazardous, or even uncomfortable, with normal ventilation.

As a practical matter, our company makes and sells tens of millions of pounds of these and similar compounds annually. Our manufacturing plant sites are located in widely dispersed parts of the country and we have one plant in Canada. The com-

CS006 0564

pounds are used nationwide and in many areas in Canada. Plant personnel work with the dry compounds and their ingredients for several hours every working day; protective goggles and simple dust respirators are considered adequate protection. In field use such protective equipment is seldom used by the workers. Overall, there is very seldom any complaint that the compounds have caused any physical troubles and in most of these cases the difficulty is found to be sensitivity to some other material not associated with our compounds.

The above discussion of normal plant and field practices shows that while there may be no formal Threshold Limit Value for our joint treatment compounds, years of experience have shown that with only simple precautions the compounds do not present any demonstrated health hazard.

Very truly yours,

UNITED STATES GYPSUM CO.

E. Maynard

Attachments:

EM/jl

cc:

B.W. Nies
File J-2 - General

CS006 0565

cc: #147-2 C. M. Howard
#186 P. Kipp

#131 A. J. Katt

#147-2 R. P. Entz

HAZARDOUS LABELLING - JOINT COMPOUNDS

December 14, 1970

We are presently faced with a perplexing situation which deals with possible liability that we might incur by not labelling our joint compound products as hazardous because of the asbestos fiber content.

[redacted]

Research has run tests which indicate that we are presently inside the limits published by the Federal Government; however, the Attorneys and Mr. Kipp feel this does not provide us with adequate protection because the industry and Government are considering lowering the amount of fiber permissible. The Medical profession does not agree as to the seriousness with respect to the use of fibers, although there is a clear cut implication that cancer can result as a result of inhalation.

Product Management feels that we would be at a decided disadvantage if we were to label our products, whereas none of our competition at this time is so doing.

One of the leaders in setting standards on the use of asbestos is Johns Manville because they have probably the greatest potential liability and considerably more at stake with respect to future sales of their asbestos. We have expressed the opinion that we believe leadership in hazardous labelling should be considered an industry problem and if our competitors label their products, we do not believe we would then be at any disadvantage.

With approximately 84 producers of joint compound in this country and no specific association to which these people belong, we have a problem in attempting to come up with a unified solution. We are recommending that this whole matter be discussed in detail at the Gypsum Association level because in Georgia Pacific and National Gypsum we have two of our largest competitors.

CRU36 2053

We would like your concurrence that this be made a subject for the Gypsum Association and also your agreement that we approach this as an industry problem and not take unilateral action.

RPE:kjs

GP036 2054

O: #186 - P. Kipp

June 11, 1970

M: 991-P - L. A. Tobey

CT: ASBESTOSIS HAZARD

Since being asked to participate in the meeting of the Health Safety Committee of the Asbestos Cement Product Association I have found the proceedings very informative and of great interest, since it exposes us to a broad field of knowledge of the investigations made by others over a long period of time as to the health hazard to people exposed to inhalation of asbestos.

We had touched in our conversation upon hazard to the general public and also to employees and I have read with interest the voluminous file you left with me and the most recent package of minutes of the last meeting. I would hope that somewhere along the line there may have been some discussion beyond what took place as outlined in your January 16, 1970 letter to Mr. Hogan.

It would appear that now being knowledgeable of the hazards appraised by the medical profession and being aware of the increasing publicity the subject is receiving in the industry and the newspapers, it behooves us to institute some concrete program toward alleviating exposure to asbestos used in our formulations. I am thinking that 10, 20, or 30 years from now our position could be very untenable if in light of having been knowledgeable and not instituting corrective action we would be called to account. Have the plants taken or been advised to take any concrete steps since January, 1970 to effectively 1. reduce asbestos dust generation, and 2 reduce peoples exposure to such dust?

LAT/ko
CC: 990M - B. M. Hostrup
147-2 - C. M. Howard
991 - R. C. Spahr

JUN 15 1970

RECEIVED JUN 15 1970

UNITED STATES GYPSUM COMPANY

510

CS007 1552

[redacted] - E. R. [redacted]
[redacted] - C. M. [redacted]
151 - DR. J. W. Zabor

July 30, 1971

[redacted] - R. P. Metz

[redacted] - C. P. King

Joint Treatment Compounds

We have had as an open question what action to take regarding the labelling of the above product group.

Based on Marvin Schmidt's memo of May 11, 1970, to Mr. Earl Maynard the amount of dust generated under adverse conditions during sanding of a joint falls below the current threshold limit value of 5 fibers per c.c. established by the American Conference of Governmental Industrial Hygienists.

This might justify the position that this product line does not fall within the provisions of the Federal Hazardous Substances Act, but our attorneys have doubts about our ability to sustain this position.

In addition it is anticipated by some close to the asbestos problem that the threshold limit value may be reduced to 2 fibers per c.c.. As you know, proposed regulations of the Illinois Pollution Board set an exposure level of .5 fibers per c.c. for in-plant exposures, which is probably far below ambient air.

The two steps taken in the application of joint treatment compounds that make the product most subject to regulation are job mixing and job sanding. Both of these would be overcome if we limit ourselves to selling ready-mix and recommend that the use of sponging rather than sanding be used to get a level surface. Earl Maynard indicates just as good a job can be done with sponging.

If this sounds practical we might consider suggesting this procedure to the Gypsum Association which may care to pass this on to other manufacturers in the interest of public health.

If we take this step, Mr. Bohrman of our attorneys suggests that our label say either "Do Not Sand" or "Apply only in accordance with enclosed instructions." Our instruction sheet should explain how to sponge the joint after application.

GP024 0136

TO: #198 C. P. Kipp August 18, 1971

FROM: #147-2 R. P. Ents

SUBJECT: JOINT COMPOUNDS, ASBESTOS FIBER

In your letter of July 30th to me you state that we might wish to consider marketing the concept of using Ready Mixed Joint Compound, which would eliminate the problem of airborne fibers during mixing in the field. You also recommend that we consider sponging the joints in lieu of sanding, which would eliminate airborne asbestos fiber during the finishing operation.

We believe that there is validity to your recommendation and it could be used if any particular locality, Government Regulatory Body or a Union, were to attempt to eliminate the use of joint compound because of possible hazardous substances (i.e., asbestos fiber).

It is our considered opinion that it would be unwise for us to place any label on our present compounds which could be construed as implying that a hazardous substance exists. No other manufacturer has taken such a step and we believe we would be placed at a competitive disadvantage. More seriously; however, we could precipitate action prematurely which could result in some individual, such as a Senator or a Ralph Nader, drawing attention to our products.

Research presently has one man working full time in an attempt to develop joint compound formulations which would be asbestos free and yet provide us with the properties that are necessary to sell our products at the market price. To the best of our knowledge, no manufacturer has an acceptable product in the US. British Gypsum by law produces compounds which are asbestos free, but the products they produce are unsaleable in this country or in Canada.

Your recommendation provides us with a quick means of overcoming the question of airborne fibers, if and when we find it necessary.

RECEIVED AUG 19 1971

RPE:kjs

cc: #152 Dr. J. W. Zabor
#147-2 C. M. Howard

GP024 1076

0-6510

UNITED STATES GYPSUM COMPANY

October 4, 1972

TO: #247, E. H. Rosse
#961, D. E. Shipley
#971, T. F. MacLennan
#981, J. T. Tucker
#991, D. S. Alderfer

RECEIVED OCT 14 1972

FROM: #147-2, C. M. Howard, Jr.

SUBJECT: STATUS OF ASBESTOS FREE JOINT COMPOUND.

As you know, Research has been working toward an asbestos free joint compound for some time. Asbestos is used in all joint compounds. It is vital in controlling consistency; is necessary in adding slip and crack resistance. Prior to asbestos being classified as a health pollutant a few years ago, it is believed that various attempts were made toward possible substitutions. These efforts apparently always ended with considered opinions that this fiber was virtually irreplaceable in joint compounds.

Our Research Section has been working toward an asbestos free joint compound for the past 18 months or so. Two main reasons:

1.) Stay in business under increasingly stringent government standards and rising environmental concerns.

2.) Avoid a competitive breakthrough.

Some 60 days ago, a Management committee was formed and it was agreed that elimination of asbestos needed top Research priority. For several reasons, powder formulas were given the main thrust. In terms of manning, Research efforts were intensified. Last week successful tests were reportedly made by Research on a production batch of asbestos free USG Joint Compound - Topping. Tomorrow the results will be demonstrated to Product Management. Once a topping is proven, it is felt that securing an all purpose and taping will come fairly easy.

Assuming success in the demonstration, C.C.P.D. has tentatively scheduled a field test in the Chicago area by the end of this week. With this experience behind us, and with your cooperation, we will move rapidly into plant/field tests in each C.P.D.

At this point, it might be felt that this letter could have waited to include tomorrow's demonstration results. However, we learned yesterday some information which, doesn't surprise us, but could pose serious ramifications for our business. National Gypsum Co. reputedly is releasing an ecology formula joint compound (asbestos free) from their "Matteson, Ill., Westwego, La., and Baltimore, Md." plants. Rotan, Texas and Long Beach, Calif. as well as Clarence Center, New York were not indicated. However, any meaningful technology can obviously and totally be applied. We need your cooperation, as quickly as possible, on helping us to verify this information, and, if true, to evaluate their state of

GP028 1518

0-0512

UNITED STATES GYPSUM COMPANY

the art. Therefore, please - -

1.) Determine, if true, what types of joint compounds are being introduced - - e.g. drying powder, hardening powder, ready mixed - taping, topping, all purpose ... perhaps texture powders.

2.) Evaluate the trade's acceptance and,

3.) Secure and ship an unopened container of each to Earl Maynard air express.

I M P O R T A N T

THIS NEEDS EMPHASIZING ONCE AGAIN. WHETHER NATIONAL GYPSUM CO. HAS IT OR NOT, THE ASBESTOS - FREE PROJECT SHOULD NOT BE DISCUSSED, NOR THE WORDS "ASBESTOS FREE" BE USED, IN COMMUNICATING OUTSIDE OF THE DISTRIBUTION LISTING OF THIS LETTER. YOUR CO-OPERATION IS ABSOLUTELY ESSENTIAL HERE!

CMH:n

cc: #132-1, J. J. McLaughlin
#147-1, C. C. Gramer
#147-2, R. P. Entz
#149, J. T. Allen
#151, K. S. Freeman
#151, E. Maynard
#157, S. T. Hadley
#157, D. M. Schmidt
#170-1, W. W. Holloway
#170-5, J. R. Milstead
#247, G. R. Frankling
#961, D. S. McVicker
#971, R. B. Fisher
#981, C. J. Atwood
#991, R. C. Spahr

GP028 1519

Gypsum Association

201 North Wells Street, Chicago, Illinois 60606 , (312) 726-5675

August 15, 1973

PLAINTIFF'S EXHIBIT

UC-5455

To the Special Committee on Asbestos in Joint Treatment Compound

Gentlemen:

On August 8, 1973, the Association's Special Committee met in Chicago to plan a field testing program to evaluate the hazard levels resulting from dry mixing and sanding of joint treatment compounds.

Present were:

E. R. Kiehl	The Celotex Corporation
E. D. O'Neill	Georgia-Pacific Corporation
J. Volk	National Gypsum Company
J. D. Cornell	United States Gypsum Company
J. H. Crumbaugh	United States Gypsum Company
K. S. Freeman	United States Gypsum Company
A. V. Abnee, Jr.	Gypsum Association
H. B. Carlsen	Gypsum Association
F. J. Rogers	Gypsum Association

The meeting opened with a historical review of events leading to the selection of this committee. Discussion followed of the problem areas involved in the use of joint compound containing asbestos. It was also pointed out that other materials in joint compound are released during dry mixing and joint sanding that may also be considered harmful. These include quartz, mica, silica and nuisance dust. The basic problem is that OSHA has set hazard levels on the amount of asbestos fibers that can be released that would affect the health and safety of the worker exposed to asbestos. The OSHA law (Section 1910.93) is specific in the fiber count allowed, and in requiring protection where exposure exceeds stated limits.

Moreover, the committee felt strongly that the industry had an obligation to its customers, generally contractors, to caution them when asbestos was involved in their products, and to give them guidance so that protection could be afforded to workers exposed to the hazard.

As a result of detailed discussion of the problem and how OSHA law will affect the use of joint treatment compound, the committee developed the following statement of scope to cover its activity.

"The scope of the Special Committee shall be to establish recommended practices for handling gypsum wallboard joint treatment compound in order to comply with current and anticipated environmental health standards."

GP036 2038

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As the meeting progressed, Mr. Joseph Volk was elected Chairman, and Mr. H. B. Carlsen, Secretary of the Committee.

The committee next reviewed the preliminary test data available from National Gypsum Company and United States Gypsum Company. These reports indicated that sanding of joints would release asbestos fibers within prescribed OSHA limits, while the mixing of dry joint compound would exceed limits. In order to acquire more definitive information, a pilot field testing program was developed. It was contemplated that a test program would be most effective conducted under extreme severe conditions. Therefore, the following circumstances were agreed upon.

1. Test location - Denver area.
   It was deemed desirable to conduct field testing in a geographic area of highest altitude where barometric pressure would influence the rate of fallout of dust and fiber. The area would also afford a more stable atmosphere for temperature and humidity control.

2. Joint compound product - Of five common products considered, it was decided that both a dry and a ready mix compound would be tested. The dry product should be a wallboard topping compound since it would most readily release asbestos fibers and other contaminants when sanded and it also represented the most frequently used of the dry compounds. The premixed product selected was ready mixed finishing compound for the same reasons.

3. Test units - It was considered advantageous if a large project of single family housing could be utilized, preferably separate homes. Twelve units would be needed - six for dry product and six for ready mix.

4. Amount of samples - It was determined that there were six manufacturers of joint treatment compound within the Association. Therefore, two test units would be assigned to each manufacturer, one for dry compound and one for ready mix.

In the dry mix, ten 25 lb. bags would be required of which seven would be used for joint treatment sanding and three for the mixing test. Five pails of ready mix would be used for joint treatment of the second test unit. Manufacturers who do not produce ready mix topping compound would be asked to supply all purpose ready mix joint compound instead. A total of 60 bags of dry topping compound would be required and 30 pails of ready mix. Additionally, one pallet of 36 empty plastic pails would be required for the mixing at test site.

GP036 2039

5. Preparation of samples - In order that there be no disclosure of which manufacturer's product is being used, it was proposed that unmarked bags and pails be supplied for packaging. A coded letter or number would be assigned to each manufacturer by the Association's confidential depository to maintain strict confidence of the individual samples. The assigned code letter or number would then be clearly marked on the bag or pail by each participating member.

   Shipment of the products would be to a designated warehouse where any shipping tags would be removed from the samples.

6. Conduct of the test - The gypsum wallboard contractor would apply the finishing compounds, six dry and six premixed, over the taped joints in the twelve test units. After proper set, representatives of the committee would assemble at the test site, together with an independent testing laboratory representative to observe and sample airborne dust resulting from the pole sanding and dry mixing operations. The contractor would supply the sander who would wear the proper respirators, eye protection and test instrumentation. It is anticipated that the sanding tests would require two days. The mixing tests can be accomplished concurrently.

7. Third Party witness - The designated witnessing agency would be present during the two day test to record and measure the hazardous elements and concentrations of dust resulting from sanding and dry mixing. A report is to be issued by the agency. Application of joint compound is to be observed by an Association staff member prior to the test.

The committee next addressed itself to the selection of an appropriate laboratory capable of conducting independent testing. Three possible organizations were suggested and are to be approached by committee members for evaluation of equipment, experience, availability, personnel and fees.

Those suggested were:

National Loss Control Service Corp. (Div. of Kemper Insurance)
Long Grove, Illinois

Industrial Hygiene Foundation of America
Pittsburgh, Pennsylvania

George D. Clayton and Associates
Southfield, Michigan

GP036 2040

The Association will issue all contracts for the work and arrangements with the test site contractor and arrange for coding and storage of materials and coordination of the pilot program.

The next subject considered by the committee was the OSHA labeling requirements for manufactured joint treatment products containing asbestos and other hazardous products. It was recommended that all manufacturers label bags and pails with the standard warning statement contained in OSHA regulations 1910.93a, as follows:

CAUTION

CONTAINS ASBESTOS FIBERS

AVOID CREATING DUST

BREATHING ASBESTOS DUST

MAY CAUSE SERIOUS BODILY HARM

The committee recommended that in addition to the mandatory OSHA warning, a second precautionary label statement for other products also appear on bags and pails. The statement as reviewed by Association legal counsel is as follows:

CAUTION

When mixing and/or 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 practicable.

For ready mix products, omit phrase "mixing and/or" in first line of the statement.

Finally, the committee agreed that a target date for the pilot tests would be the week of September 10, 1973, in order that a report could be prepared for the semiannual meeting in October 1973.

Yours very truly,

GYPSUM ASSOCIATION

H. B. Carlsen

H. B. Carlsen, Secretary
Special Committee
on Joint Compound

HBC:mj

cc: To the members of the
Manufacturing and Mining,
Safety and Technical Committees

GP036 2041

PLAINTIFF'S EXHIBIT

UC-5467

August 17, 1973

cc: #147-1, Mr. C. C. Gramer
#147, Mr. J. T. Allen, Jr.
#147-2, Mr. R. P. Entz
#170-6, Mr. J. D. Cornell
#159, Mr. E. C. Mobbs
#147-2, Mr. C. M. Howard
#151, Mr. E. Maynard
Mr. J. H. Crumbaugh

TO: #151, Mr. J. N. Walker

FROM: #151, K. S. Freeman

JBJECT: CAUTION LABELS FOR JOINT COMPOUNDS

As a member of a "Special Committee on Asbestos in Joint Treatment Compounds" under the auspices of the Gypsum Association, I am reporting on the recommendations which were proposed at their first meeting on August 8, 1973. One recommendation was that all joint compound manufacturing members of the Gypsum Association affix the OSHA asbestos caution label on all containers of joint compounds, powder and ready-mix.

Both the National Gypsum Company and the U. S. Gypsum Company submitted test data on mixing and sanding joint compounds. With respect to asbestos fiber concentrations, both reports were in agreement that mixing powder joint compounds resulted in fiber concentrations that usually exceeded OSHA standards, and in some instances, greatly exceeded OSHA standards.

The two reports were also in agreement on data resulting from sanding the dried joint compounds. The fiber concentrations, from both powder and ready-mix joint compounds, were all lower than OSHA standards. It was on the basis of our test data (and the regulations cited in title 29, Chapter XVII, Section 1910.93a, paragraph 2 (2) of the Federal Register dated June 7, 1972) that we reached a decision in August, 1972 to print the OSHA asbestos caution label on all bags of powder joint compounds, but not to label the containers of ready-mix joint compounds.

It was reported at the Gypsum Association Committee meeting that the National Gypsum Company was affixing the OSHA asbestos caution label on containers of ready-mix joint compound on their contention that the applicator has the right to know that a product contains a potentially hazardous ingredient; other committee members concurred. I stated, however, that approval by USG of the OSHA asbestos caution label on ready-mix joint compound containers was contingent on approval by our Marketing and Legal Departments.

Since the time of the committee meeting I have seen two other competitor's ready-mix joint compound containers that have asbestos caution labels. "Top-Pro Ready-Mixed Vinyl Taping Cement" producted by the Roach Paint Company of Dallas, Texas has a 4-1/8" x 8-5/8" label on the top of their cardboard carton as follows: "CAUTION - Contains Asbestos Fibers - Avoid Creating Dust. Breathing Asbestos Dust May Cause Serious Bodily Harm. We Do Not Recommend Sanding Of Our Joint Cement. For Best Results, We Recommend Sponging Joints to Eliminate Dust". Another product, "Paco Vinyl Ready-Mixed Joint Cement" produced by Paco Textures Company of Dallas, Texas has the OSHA asbestos caution label on the carton.

GP034 1609

Another recommendation by the committee was that all joint compound manufacturing members of the Gypsum Association should affix a uniform caution statement for siliceous and nuisance dusts on all containers of powder and ready-mix joint compounds as follows: "CAUTION - When mixing and/or 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 practicable." For ready-mix products, omit phrase "mixing and/or" in first line of the statement.

Reports submitted by the National Gypsum Company for powder and ready-mix joint compounds have the following statement in their summary: "Tests showed that the total and respirable dust released during the mixing operation and the sanding operation will exceed the allowable OSHA limits." USG has not conducted tests for the total and respirable fraction of siliceous and nuisance dusts.

My recommendations are as follows:

1. I believe that the OSHA asbestos caution label on ready-mix compounds would not be a handicap to sales, especially if it were universally adopted. However, I recommend that this decision be referred to the Marketing and Legal Departments for approval.

2. Although standards have been established by OSHA for maximum levels of the total and the respirable fractions of siliceous and nuisance dusts in the work environment, there are no specific, mandatory caution labels such as that for asbestos. However, cautionary label statements would be required if any foreseeable use, particularly the mixing and sanding of the joint compounds, will result in dust levels that exceed OSHA standards.

Tests are scheduled in Denver in mid September to establish, among other things, the dust levels created by mixing and sanding joint compounds. Samples of powder topping joint compound and ready-mix joint compound will be submitted by six Gypsum Association joint compound manufacturing members in a blindfold test. The results will be monitored by an independent industrial hygiene testing laboratory which has not yet been selected. I recommend that a final decision on the adoption of a uniform Gypsum Association dust hazard label be deferred until the mixing and sanding tests are conducted in Denver.

KSF/jak

GP034 1610

THE DISCOVERY COMPANY

Calidria ASBESTOS

"CALIDRIA" ASBESTOS SG-130 AND SG-210
For Tape Joint Compounds

Lowers Costs Two Ways

CALIDRIA Asbestos acts as a bodying and secondary thickening agent permitting formulation of lower density, more economical tape joint compounds without the sacrifice of performance. CALIDRIA Asbestos is produced by a proprietary manufacturing process that yields unusually high fiber content and more complete fiber liberation from the natural bundles. As a result, CALIDRIA Asbestos goes up to twice as far, pound for pound, as commercial grades of asbestos containing large amounts of other filler materials that have no specific desirable effects on tape joint compound properties.

Reduces Cracking

The fibers of CALIDRIA Asbestos behave as an active lyophobic colloid in aqueous dispersion; by this mechanism CALIDRIA Asbestos increases tape joint compound liquid cohesive strength during drying. Increased liquid cohesive strength greatly reduces the tendency for cracks over nail holes, in thick sections at the center of the joint, and along the feathered edges.

Enhances Sandability

CALIDRIA Asbestos contains mainly chrysotile fiber and is essentially free from abrasive contaminants, such as magnetite and serpentine rock dust. This composition results in a low density product, free from contaminants that interfere with sanding.

Improves Uniformity

Narrow and well-controlled particle size distribution, low alkalinity and high brightness are characteristic of CALIDRIA Asbestos. These properties are consistent from batch to batch and improve the uniformity of tape joint compounds using CALIDRIA Asbestos.

Suggestions for Use of CALIDRIA Asbestos

CALIDRIA Asbestos can be readily used in your present tape joint compound formulation. Add approximately one-half the proportion of asbestos you now use. Increase the proportion of calcium carbonate or other inert filler to make up for the lower quantity of asbestos. You may also be able to use slightly more water in your ready-mix and maintain your present viscosity level. No other changes in your

October, 1968
F-42258

CALIDRIA, CELLOSIZE, UCAR, and UNION CARBIDE are trade marks of Union Carbide Corporation.

M-15

UNION CARBIDE CORPORATION • CHEMICALS AND PLASTICS • 270 PARK AVENUE, N.Y., N.Y. 10017

GP 013011

"CALIDRIA" ASBESTOS SG-130 AND SG-210

For Tape Joint Compounds

Suggestions for Use of CALIDRIA Asbestos (Continued)

formulation or manufacturing procedure are required.

CALIDRIA Asbestos SG-130 has the coarser particle size; it finds use for bedding compounds or perhaps spackling compound. The SG-210 has the finer particle size and is favored for topping compounds, all-purpose compositions, texture paints, and similar formulas.

A Suggested Ready-Mix Tape Joint Compound For Use With CALIDRIA Asbestos

	Parts by Weight Dry Basis
Fillers:	
Calcium Carbonate, No. 1 White (Thompson Weinman)	61.42
Mica, P80F (Western Mica)	21.00
Clay, ASP-400 (Minerals and Chemicals Philipp Corp.)	4.00
CALIDRIA Asbestos, SG-210 (Union Carbide)	4.58
Binder:	
UCAR Latex 131 (Union Carbide)	6.60*
Workability Control Agent:	
CELLOSIZE Thickener, TJC Grade (Union Carbide)	0.50
Drying Control:	
Ethylene Glycol (Union Carbide)	1.00
Defoamer:	
"Nopco" PD-1 (Nopco Chemical Company)	0.10
Dispersant:	
"Daxad" 30 (Dewey & Almy Chemical Div.)	0.60*
Bacteriostat:	
"Dowicide" A (Dow Chemical Co.)	0.20
	100.00

Total Water: about 56 parts by weight per 100 parts dry solids

*Contained solids basis

GP 013012

Union Carbide trial exhibit UC-5448: Affidavit of Andrew McCampbell Gibson (Alston & Bird) Authenticating U.S. G... Published by AsbestosClaims.Law
ACL Doc 19881 · Page 40 of 93 asbestosclaims.law/library/19881/40

"CALIDRIA" ASBESTOS SG-130 AND SG-210

For Tape Joint Compounds

Typical Product Characteristics

	CALIDRIA Asbestos	
	SG-130	SG-210
Reflectance (G.E. Photovolt)	68%	
Contained magnetite	2% max.	
Alkalinity (as % of Na_2O)	0.05 to 0.06	
pH (5% aqueous slurry)	8.5 to 9.5	
Surface area (BET)	50 to 60 $m^2/g.$	
Oil Adsorption (DOP ÷ 100% asbestos)	90 to 100	110 to 120
Wet Bulk, settled vol. (ml.) 10g/250 ml./1 hr.	200	220
Dry Bulk (#/ft.^{3})	7 to 8	5 to 6
Water absorption (wt. % in filter cake)	55 to 60	62 to 65
Size distribution (cumulative % retained)		
Wet Screen mesh size		
100	5	Trace
200	17	3
325	28 to 32	10 to 15

Packaging and Shipping Information

Product Form – Opened (finely ground) chrysotile asbestos fiber.

Packaging –

	CALIDRIA Asbestos	
	SG-130	SG-210
One Package	40 lb.	30 lb.
Pallet Weight		
Carload	1,600 lb.	1,050 lb.
Truckload	2,000 lb.	1,500 lb.

Shipping –
Classification – asbestos shorts
Rail point of origin – Welby, California (King City, California)

TOXICOLOGICAL PROPERTIES

It has been known for many years that some persons working in asbestos production were prone to develop a disabling lung disease. In time, this condition became known as asbestosis and was related to exposure to high concentrations of asbestos dust. With further experience, it was found that men could work with asbestos without development of lung disease if dust concentrations were kept below a certain level. It is now generally accepted that a man can work a 40-hour week for a lifetime without developing asbestosis if the asbestos dust particle count is kept at or below 5 million particles per cubic foot of air. This dust concentration of 5 million particles per cubic foot of air is the Threshold Limit Value for asbestos, and no cases

GP 013013

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TOXICOLOGICAL PROPERTIES (Continued)

of asbestosis are believed to have occurred when exposures have been maintained at or below this level, despite large-scale utilization (now approaching one million tons per year in the U.S.A.). This concentration of dust is generally not visible in the average work area unless a beam of light causing a Tyndall effect is present. Usually the dust concentration must be from 8-10 million particles per cubic foot before its presence is visible in average lighting conditions.

Several years ago, it was reported that there was an increase in the incidence of cancerous tumors, especially of the lung, associated with asbestosis. Recently there have been reports of some cancers occurring in individuals exposed to asbestos dust, but who have not developed clinical asbestosis. It is believed by most authorities that these cases have been associated with exposures significantly exceeding the Threshold Limit Value. A major manufacturer of asbestos products who also mines asbestos has not been able to show an increase in cancerous growths among men working where dust concentrations were maintained at the Threshold Limit Value.

Control of asbestos dust exposure is therefore necessary. The control methods are the standard ones applicable to a variety of dusty operations. They include closed flow systems, wet processes where possible, and adequate exhaust ventilation where openings in the system are necessary. Pelletizing is sometimes used to improve the handling characteristics of otherwise dusty materials. Where satisfactory containment to stay within the Threshold Limit Value is impractical or impossible, efficient and reliable respirators are available for the protection of the employee. A program of environmental monitoring in manufacturing operations is highly desirable to determine that Threshold Limit Values are not being exceeded. Employees should wear respirators where dusting occurs in finishing products such as sanding taped joints.

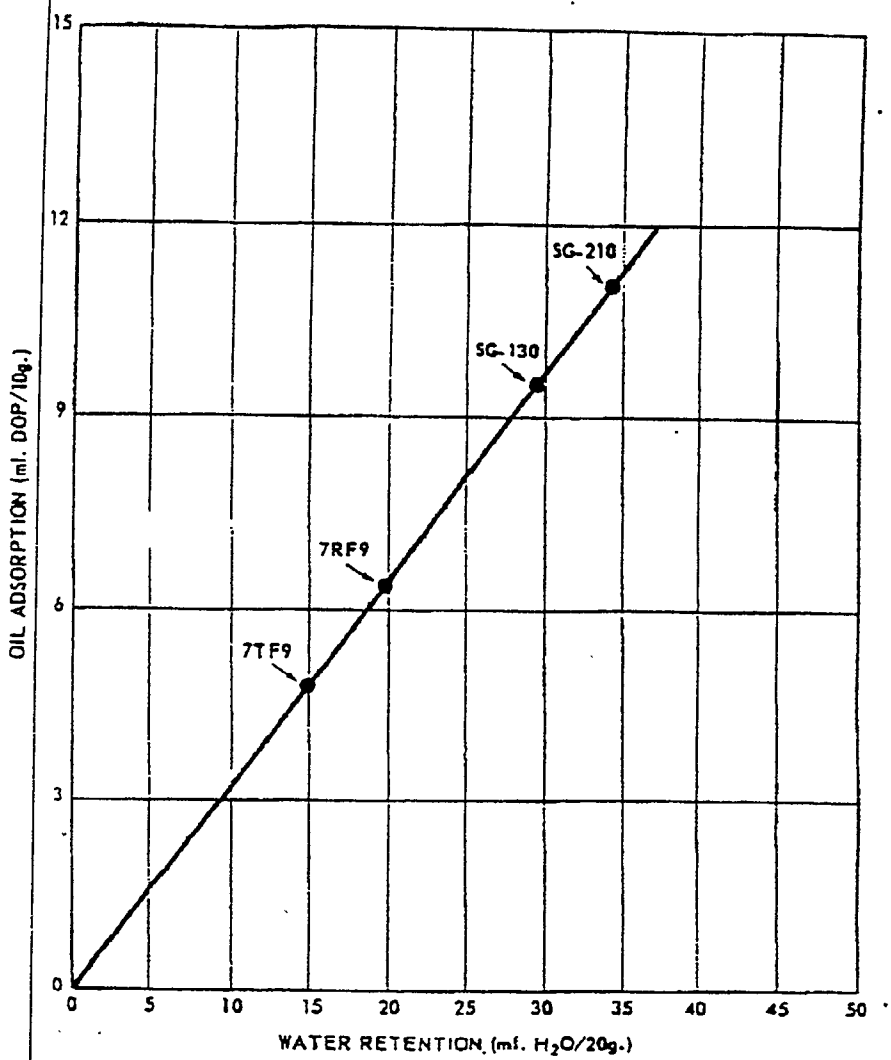
Pre-employment and periodic physical examinations of workers are desirable. These should include chest X-rays to insure that the worker has no chest condition prior to work with asbestos and to determine that no lung changes are resulting from work with asbestos.

In conclusion, while asbestos dust in excess of the Threshold Limit Value is potentially harmful, as are many other dusts encountered in industry, it is as readily controlled as other such dusts and it can be used safely with appropriate precautions.

Union Carbide trial exhibit UC-5448: Affidavit of Andrew McCampbell Gibson (Alston & Bird) Authenticating U.S. G… Published by AsbestosClaims.Law
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"CALIDRIA" ASBESTOS SG-130 AND SG-210

For Tape Joint Compounds



RELATIONSHIP BETWEEN WATER & OIL ADSORPTION CAPACITY OF SOME ASBESTOS PRODUCTS FOR TAPE JOINT ADHESIVE FORMULATIONS

GP 013015

THE DISCOVERY COMPANY

UNION CARBIDE CORPORATION
CHEMICALS AND PLASTICS
270 PARK AVENUE, NEW YORK, N.Y. 10017

Sales Offices

United States

ATLANTA, GEORGIA 30309	1371 Peachtree St., N. E.	404-892-7500
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BOSTON, MASSACHUSETTS 02194	300 First Ave., Needham Hgts.	617-444-5400
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CHARLOTTE, NORTH CAROLINA 28210	6230 Fairview Rd.	704-364-1400
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TULSA, OKLAHOMA 74114	2901 South Harvard	918-742-5524

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HONG KONG	Union Carbide Asia Ltd., Hong Kong
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Middle East and North Africa

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AFRICA (EAST)	Union Carbide Africa Ltd., Nairobi, Kenya
AFRICA (SOUTH)	Union Carbide South Africa (Pty) Ltd., Johannesburg, Capetown, Durban; Republic of South Africa

F-42258

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GP 013016

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Rec'd 211

GEORGIA-PACIFIC

INTERDEPARTMENTAL COMMUNICATION

DATE: May 7, 1970

TO: Mr. C. W. Lehnert

LOCATION: Tigard Lab

FROM: G. E. Wilson

LOCATION: Portland

SUBJECT: Joint Cement

RECEIVED
MAY 8 1970
RESEARCH AND DEVELOPMENT

The use of asbestos fibers is receiving more attention every day in the construction industry as it relates to both air pollution and potential health hazards. Although in both cases it would appear that the dangers are quite remote, it would appear also that we should examine our joint system formulas to determine if we can use some material other than asbestos if this should become necessary sometime in the future. I would not suggest a crash program, but as time permits this replacement should be examined.

GEW

G. E. W.

GEW:jr

One possibility is wood fiber such as cellufloc, or fillers with higher water carrying properties.

GP 008241

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GEORGIA-PACIFIC

INTERDEPARTMENTAL COMMUNICATION

DATE: June 3, 1970

TO: Mr. H. F. Fink — LOCATION: Portland

FROM: E. F. Fatz — LOCATION: Portland

SUBJECT: MT. SINAI HOSPITAL MEDICAL SCHOOL
New York, N.Y.

Re: Lung Research

Matt, the above subject hospital is the New York group doing considerable research in lung diseases especially among asbestos workers.

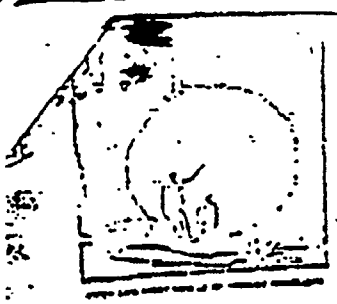
I found out that they had a 5-man crew on a drywall job in New York of which M&R Drywall was the contractor. They ran tests on a group of drywall joint finishers and found a spot on the lung of one man who primarily did the joint sanding on the job. What it is, or what it was caused by, is undetermined at this time. It is possible that the drywall industry might be one of the next targets for their lung research. This information might be of interest to the Gypsum Association Safety Committee. If I find out anything more on the subject I'll be sure to let you know.

EFF/mf

E.F.F.

CC: Mr. G. E. Wilson - Portland
Mr. O. E. Burch - Portland

GP 008250



GEORGIA-PACIFIC CORPORATION

[illegible] • [illegible] • [illegible]

TELEPHONE: [illegible] • TELETYPE: [illegible]

AREA CODE: [illegible] • [illegible]

June 9, 1970

Mr. F. J. Rogers, Secretary
Gypsum Association Safety Committee
201 North Wells Street
Chicago, Illinois 60606

Dear Fred:

We believe the attached is of great importance to the Association and member companies.

You are aware that joint systems contain approximately 5% asbestos, some mica and the balance is limestone.

Based on threshhold limits adapted by A.C.G.I., mica (when exceeding 5% free silica) can be classed as a respiratory irritant. Asbestos is very harmful, however we question whether the percentage used in a formula and after it is mixed in a batch could be considered harmful.

We realize that someone will be the whipping boy, also product liability will be stressed. It is our opinion that the entire blame can be placed on the contractor, for not insisting on respirators and dust masks when sanding. We understand that dust samples will be obtained during a sanding operation and analysis made of the samples. We question this approach, the problem would be the large amount of dust, 10 microns or smaller that is generated by the sanding operation and breathed by the individual.

We will keep you posted of any other problems that may develope. In all probability, U. S. Gypsum and National Gypsum have been alerted and we will be interested in their approach to minimizing the problem. Please send 300 "Watchful Wally" stickers and bill this office. Thank you.

Sincerely,

M. F. Tink
Safety Supervisor

MFT/sh

Attachment

GP 008252

GEORGIA-PACIFIC

INTERDEPARTMENTAL COMMUNICATION

DATE: July 27, 1971

TO: *See Below

LOCATION:

FROM: M. F. Fink

LOCATION: Portland

SUBJECT: MICA-ASBESTOS CONTROLS

Upon reviewing the Occupational Health and Safety (OSHA) Standards, we note a change in the Threshhold Limits as regards mica. It had been established that mica containing 5% or less of free silica (SiO_2) rated as nuisance dust, limited to 50 M.P.P.C.F. The new Hazard Control Act specifies that there shall be a conversion factor based on the percent of free silica and Threshhold Limits shall be reduced accordingly. The Threshhold Limits value for mineral dusts as adopted by the American Conference of Governmental Industrial Hygienists is $250/\%\ SiO_2 + 5$. Mineral dust containing 2.5% free silica would be limited to 33.4 M.P.P.C.F. instead of 50 M.P.P.C.F.

When placing a purchase order for mica request an analysis of the product especially the free silica content. Do not confuse combined silica with free silica. The analysis will indicate percentages of combined and free silica.

The problem will be created when the employee empties the sacks of mica into the mixer or blender. He and other employees in the area shall wear dust respirators. We recommend the "Dustfoe 66" obtainable from Mine Safety Appliance. It gives maximum protection against toxic dusts, to the permissable limits of lead, plus fibrosis dusts.

Asbestos: We have a similar problem with asbestos, that is when the employee empties the material into the mixer. No Threshhold Limits have been established for fibrous asbestos. This is the raw material that is added to the batch or mix. We must take every precaution to eliminate the hazard and to protect the employee.

The "Dustfoe 66" is recommended for respiratory protection. The medical profession and hygienists have stated that exposure to asbestos dusts are harmful as the respiratory system cannot expel the dusts. The particles lodge in the lungs and keeps building up and asbestosis results from the exposure and breathing of these dusts. It shall be mandatory that the employee or employees handling the bags or containers of asbestos wear respirators.

GP 008261

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Mica and asbestos are included in the Federal Occupational Safety and Health Act of 1970, (OSHA). The inspector will review rules and regulations pertaining to safe handling and preventive measures. The procedures referred to in this letter shall be adopted and enforced.

M. F. F.

MFF/ab

*Mr. K. W. Brown - Acme ← THIS COPY FOR
Mr. J. D. Rauch - Akron, N. Y.
Mr. P. A. Jackson - Chicago
Mr. H. W. Scharf - Marietta

cc: All Plant Managers (except Canadian)
Mr. G. E. Wilson
Mr. E. B. Hollingsworth
Mr. T. W. Richards
Mr. J. W. Hart
Mr. C. W. Lehnert
Mr. J. B. Moss

GP 008262

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SEP 23 1971

NATIONAL GYPSUM COMPANY

BUILDING PRODUCTS DIVISION

BUFFALO, NEW YORK 14202

ERT H. FAY

VICE PRESIDENT - RESEARCH AND MARKETING

September 24, 1971

Mr. W.H. Hunt, President
Georgia-Pacific Corporation
900 S.W. Fifth Street
Portland, Oregon 97204

Dear Bill:

We were indeed sorry that you were unable to attend our Seminar.

Of course, I cannot be certain, but I would guess that you do use asbestos fiber in joint treatment products and in finishes for wallboard.

Our tests indicate that sanding of joint treatment products and particularly the spraying of wall finishes offers some substantial potential hazards.

You may feel it advisable to check into this.

Sincerely,

AHF:les

GP 008257

~~R&D 2~~
R+D 347

October 7, 1971 per CW 9-26-7

Mr. W. H. Hunt

Portland

C. W. Lehnert

Tigard Lab

ASBESTOS FIBER

We do market joint compounds and interior surfacing textures which contain between three and seven percent asbestos fiber. Our sales level of these products is over 50,000 tons annually, so it is an important business for us. We do not, however, market the fireproofing plaster which is mentioned in the correspondence from National Gypsum and might contain as much as 25% asbestos.

Glenn has asked us to try to eliminate the asbestos in these products. We have been moderately successful in as much as we are in the process of reducing or eliminating the asbestos from our texture line. We had felt that the presence of asbestos in the textures would be more critical because they are spray applied and there would be more danger of inhaling the fibers. If National Gypsum is correct, the joint compounds will also come under considerable pressure from the environmental people.

In any event, we will expedite our efforts to get rid of the asbestos in the joint compounds. This will be far more difficult because the asbestos controls the working properties which are essential to acceptance by the contractors. Our competition will have the same problems, so it will be a case of finding a solution before they do.

It might be helpful to have any information from the seminar Mr. Fay mentions. We had heard some time ago that limitations might be imposed upon the quantity of asbestos that would be permitted in a given product. If so, the problem would not be as difficult as completely eliminating asbestos fiber. If you agree, I will contact Mr. Fay to see if there is any information he can pass along to us. I have made copies of the correspondence and am returning your file.

C. W. L.

CWL:elz

Attachment

GP 008267

MINUTES OF THE
ANNUAL MEETING
GYPSUM ASSOCIATION
AMBASSADOR WEST HOTEL
CHICAGO, ILLINOIS

April 5, 1972

The meeting was called to order at 9:00 a.m. by Mr. J. P. Hayes, President. Those in attendance were:

F. S. Burgen	The Celotex Corporation
W. D. Herbert	The Celotex Corporation
E. R. Kiehl	The Celotex Corporation
D. W. Miller	The Celotex Corporation
C. E. Abbey	The Flintkote Company
M. C. Carpenter	The Flintkote Company
E. R. Stainback	The Flintkote Company
O. E. Burch	Georgia-Pacific Corporation Gypsum Division
J. D. Friedlein	Georgia-Pacific Corporation Gypsum Division
G. W. Wilson	Georgia-Pacific Corporation Gypsum Division
G. I. Fischer	Grand Rapids Gypsum Company
J. L. Maddox	Grand Rapids Gypsum Company
K. H. Atwell	National Gypsum Company
B. Brower	National Gypsum Company
J. P. Hayes	National Gypsum Company
J. D. Shull	National Gypsum Company
R. G. Walker	National Gypsum Company
F. H. Zimmerman	National Gypsum Company
T. E. Armstrong, Sr.	Texas Gypsum Company, Inc.
B. Franklin	Texas Gypsum Company, Inc.
J. H. Crumbaugh	United States Gypsum Company
C. C. Gramer	United States Gypsum Company
M. L. Hipsher	United States Gypsum Company
W. W. Holloway	United States Gypsum Company
A. R. Rump	United States Gypsum Company
A. J. Watt	United States Gypsum Company
A. V. Abnee, Jr.	Gypsum Association
D. E. Brackett	Gypsum Association
H. B. Carlsen	Gypsum Association
D. R. Elwing	Gypsum Association
T. D. MacQueen	Gypsum Association
F. J. Rogers	Gypsum Association
R. Baker	Legal Counsel
D. R. Macdonald	Legal Counsel

GUESTS

H. B. Whitaker	Underwriters' Laboratories, Inc.
J. A. Bono	Underwriters' Laboratories, Inc.

GP 008319

Mr. Zimmerman then proceeded to briefly describe the first safety seminar which was recently held in New Jersey. Due to the success of this program and the response from the member company personnel in attendance, the Safety Committee has recommended that the Safety Seminar be accepted as a continuing activity of the Safety Committee, and that future seminars be held at various locations throughout the country.

Chairman Zimmerman noted that the National Institute of Occupational Safety and Health (NIOSH) has prepared a criteria document on all toxic and hazardous materials in plants and that asbestos is listed as the number one hazardous material. Maximum exposure permitted is two asbestos fibers per day. Annual X-rays are required for employees having more than ten years service in asbestos environments. For employees wearing respirators, exposure is limited to 45 minutes out of each hour. Any product containing more than 1% asbestos must be marked with a warning label. Mr. Zimmerman noted that members should be aware of this problem area and should work together as never before to develop acceptable working standards with asbestos. Mr. Zimmerman briefly referred to standards also being produced with respect to asbestos by the Environmental Protection Agency.

Mr. Zimmerman reported that the rules being developed by OSHA and NIOSH for the asbestos industry should serve as a warning to the gypsum industry. There is a need to work together in an industry team effort to study our own deficiencies so that the problems encountered by the asbestos industry can be avoided. Industry spokesmen need to know and talk to Washington representatives so that the industry position and efforts are made known early.

The report of the Safety Committee was accepted with thanks.

REPORT OF THE MANUFACTURING AND MINING COMMITTEE

Mr. W. W. Holloway, Chairman of the Manufacturing and Mining Committee, gave the report for his committee.

Mr. Holloway indicated that a principal function of the committee is to help implement the recommendations of several other standing committees. He noted there now is an additional need to evaluate the massive amount of data being generated by various agencies affecting the industry. The Manufacturing and Mining Committee proposes to deal with data in three general areas through the Association.

1. Surveillance - what to do and when
2. Act on legislation at all levels
3. Change plans and reactions to new legislation affecting the industry

GP 008320

GP 08

GEORGIA-PACIFIC

INTERDEPARTMENTAL COMMUNICATION

DATE: November 20, 1972

TO: Mr. C. W. Lehnert

LOCATION: Tigard

FROM: W. N. Gettel

LOCATION: Tigard

SUBJECT: ASBESTOS REPLACEMENT - ACME JOINT SYSTEM PRODUCTS

cc: Mr. T. W. Richards - Tigard
Mr. O. E. Burch - Portland
Mr. K. W. Brown - Acme
Mr. R. D. Meyer - Portland
Mr. W. D. Brooks - Carrollton
Mr. L. E. Winter - Acme
Mr. S. R. Clark - Acme

During the week of November 13, I visited the Acme plant in order to make up a field trial batch of All Purpose formulated with a substitute for the asbestos fiber. For the benefit of those receiving copies, the use of asbestos is considered a health hazard and rigid controls are being enacted.

A 2000 lb. batch of this new formula was made up with no difficulty. Subsequent lab tests indicated that the joint cement was of good quality.

On November 15 Lloyd Winter and I took 10 bags of this new product to Oklahoma City for a field test. The field test was conducted by Leon Harner who was described to us as being of the top three or four applicators in the Oklahoma City area and also as being very honest.

Leon's comments on the working properties follow:

1. "Mixed good.
2. Pinholes not bad.
3. The mud does not drop from Ames tools.
4. Goes good through Ames tools.
5. Body seemed to be real good.
6. Pock marking not bad.
7. Good in corners with hand tools.
8. Feathered out good along edges.
9. Works good around windows (deep fill on corner beads).
10. Crossed over wet joints real good - does not pull existing mud out.
11. Works as good as U.S.G. All Purpose Ready Mix.
12. Flares out a little on knife when spotting nails.
13. The mud works better than the present G-P All Purpose."

GP 008417

Item 12 was the applicator's only negative comment. However, he did not think this property was very bad. I will be talking to the applicator in a few days in order to determine if any problems developed in subsequent use of the product.

We will be testing this new formula as a topping in the northwest in the near future. If these trials are successful, we will consider taking the product into the Memphis area for additional trials.

During my stay at the Acme plant, I made spot checks for quality and grit on eight random batches of four-gallon box Ready Mix. The batches were made on various dates from 10/2/72 to 11/11/72. The Ready Mix was of excellent quality and no evidence of grit was found.

W. N. G.

WNG:elz

FOR MESSRS. LEHNERT, RICHARDS, BROWN, WINTER, AND CLARK ONLY:

Raw Materials cost of this new formula is approximately $.365/bag compared to $.55/bag for the present All Purpose formula. Attagel Clay is confidential information and should not be related to anyone outside our own manufacturing organization.

GP 008418

GP 1C-1

GEORGIA-PACIFIC

INTERDEPARTMENTAL COMMUNICATION

DATE: June 19, 1973

TO: Mr. John Woodsmall

LOCATION: Detroit Sales

FROM: C. W. Lehnert

LOCATION: Tigard Lab

SUBJECT: ASBESTOS FIBER IN JOINT COMPOUNDS

cc: Mr. O. F. Burch - Portland
Mr. T. W. Richards - Tigard
Mr. T. R. Godfrey - Portland

THIS COPY FOR

COPY

I will try to respond to your customers' concern about asbestos fiber prompted by our labeling of joint system bags. This caution label is required by the Occupational Safety and Health Administration (OSHA). We have always used asbestos fiber in our joint system products, so if there is a hazard, it is no different today than it has been in the past. The hazard is the inhalation of asbestos fiber. The degree of hazard would depend on the concentration of asbestos fiber in the air and duration of exposure to that air. The health problems associated with asbestos have occurred in situations where workers have been exposed to high concentrations of asbestos fiber over a period of years. Joint compounds contain relatively small percentages (2-8%) of asbestos fiber.

OSHA has imposed a number of stringent standards on plants where products are manufactured containing asbestos fiber. These include limitations on the concentration of fiber in the air, procedures for handling the asbestos fiber, use of protective devices (respirators), periodic medical examinations, and labeling of all products containing asbestos fiber.

I am not aware of any OSHA regulations for the use of joint system products. However, it is recognized that there is some exposure during the mixing of dry products and the sanding of joints after the joint compounds have been applied. The level of asbestos fiber concentration at these times is not presently known. The industry is currently planning tests to determine the level of airborne asbestos during the mixing and sanding. In the meantime, it would probably be advisable for workers engaged in these operations to wear respirators. Once mixed or wetted, the asbestos fiber is not subject to becoming airborne and, therefore, is no longer hazardous. For example, ready mixed products would present no problem other than perhaps the sanding.

PLAINTIFF'S EXHIBIT PX 22 5/27/88

RECEIVED BY JUN 21 1973 GYPSUM DIVISION

GP 009365

One solution of the asbestos fiber problem for all concerned is to eliminate it from our products. We are engaged in a program to find ways to do this. Our first efforts were with joint system textures because we felt the spray application presented some special problems. At this time we are about 90% converted to non-asbestos texture formulas. We are now directing our attention to our dry and ready mixed joint compounds.

I hope this information will answer our customers' questions concerning the possible hazards of asbestos fiber and the actions being taken to eliminate or minimize those hazards.

CWL:elz

GP 009366

Mr. G. E. Wilson, Gypsum Division
Georgia-Pacific - Portland, Oregon

JUN 14

Gypsum Association
201 North Wells Street, Chicago, Illinois 60606 (312) 726-5675

June 11, 1973

TO THE BOARD OF DIRECTORS

Gentlemen:

Re: Asbestos in Joint Treatment Compound

On Wednesday, May 30, 1973, representatives of the Gypsum Association met with OSHA representatives at the Department of Labor, Washington, D. C. Present were:

Frank H. Zimmerman	National Gypsum Company
Joseph Volk	National Gypsum Company
H. B. Carlsen	Gypsum Association

Representing OSHA were:

Fred Bishoff	-Deputy Administrator
C. R. McClure	-Chief Enforcement Administrator
M. S. Gabis	-Industrial Hygienist

The topic under discussion was Section 1910.93 of OSHA regulations (copy attached) pertaining to asbestos. Our concern was with the effect of the regulation on dry-mixing and sanding of joint treatment compound containing asbestos. We raised various questions in regard to responsibilities of the manufacturers of joint treatment compound where labeling, monitoring, contractor responsibilities, compliance, etc., are affected.

In strict interpretation of the text of the regulations, a number of questions arise. Although hazard levels for asbestos are stated, some preliminary investigations indicate that asbestos released in sanding joint treatment may be below OSHA hazard levels. On the other hand, preliminary tests indicate mixing of dry joint compound may be above the hazard level.

It was proposed to OSHA that the Gypsum Association would consider sponsoring a monitoring program, conducted by an independent laboratory, to determine and report the dust conditions on job sites under actual field conditions. The Association program needs to be developed in detail. It should include monitoring of all dust generated in a sanding operation including mica, silica, quartz, talc and total dust.

Following the development of the program and approval by the Board of Directors another meeting should be arranged with OSHA officials for their review and comments on its acceptability.

GP 008528

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The results of the program will provide the Gypsum Association with the necessary data to develop uniform procedures and guidelines for users of joint treatment compounds.

The OSHA representatives encouraged the Association to pursue this test program, and implied that this might allow a contractor group to possibly seek variances if they could show that Association procedures to mix and sand joint compound had been followed. It was definitely stated that if the proposed program was finalized and developed, it would certainly show good faith on the part of the manufacturer and the contractors who adhered to it.

With the approval of the Board the Executive Vice President of the Association can appoint a three or four member Association Task Group of individuals knowledgeable in joint treatment compounds and monitoring procedures to develop the program, evaluate information available, and consider hazards as they relate to OSHA and NIOSH requirements.

This preliminary approach to the asbestos dust hazard in joint treatment materials results from the Directors' approval of an investigation of the problem last April, and the suggestion that member companies contribute any accumulated data useful in determining a proper test program. The interest expressed by OSHA is encouraging. May we have your reaction to this report at your earliest convenience?

Yours very truly,

GYPSUM ASSOCIATION

H. B. Carlsen

H. B. Carlsen, Secretary
Technical Committee

HBC:mj
Enc.
cc: Chairmen of all Committees

GP 008529

June 29, 1973

Mr. O. T. Burch — Portland

C. W. Lehnert — Tigard

[illegible] BULLETIN ON ASBESTOS FIBER
[illegible]

cc: Mr. C. T. Alcon - Portland
Mr. D. C. Corkill - Tigard

Enclosed is a draft of a letter explaining why we are putting the asbestos caution label on some of our joint system bags. Hopefully a letter along these lines will permit our field sales people to respond to any inquiries about asbestos fiber.

C. W. L.

CWL:jg

Enclosure: Draft letter

GP 008771

Proposed letter to field sales concerning asbestos fiber in joint system products.

There may be some curiosity and questions from our customers concerning the caution label we are currently placing on many of our joint system products. The label reads:

Caution

Contains Asbestos Fibers

Breathing dust may cause serious bodily harm

The Occupational Safety and Health Administration (OSHA) has required all products containing asbestos fiber to be identified in this manner. The concern is the breathing of air which contains asbestos fiber. The degree of hazard is dependent upon the concentration of fiber in the air and the duration of exposure. The health problems associated with exposure to asbestos fiber have occurred in industries where workers have been exposed to high concentrations of the fiber over a period of years.

All joint compound manufacturers use asbestos fiber as an essential ingredient in their products. These compounds, however, contain relatively small amounts of asbestos (2-8%). We are not aware of any health problems in our industry but we are nevertheless required to comply with the OSHA requirements. The standards imposed on our plants are very stringent. There are severe limitations on allowable concentrations of asbestos in the air; strict procedures

GP 008772

for handling the asbestos; a mandatory program for wearing protective devices (respirators); periodic medical examinations; the labeling already described and many other very restrictive measures.

We are not aware of any OSHA regulations covering the use of joint compounds. It is recognized that there is some exposure to asbestos fiber during the mixing of the dry products and in the sanding of the joints. It is not presently known whether the concentrations of asbestos fiber at these times is in the hazardous range established by OSHA. The Gypsum Association is planning some tests to monitor levels of asbestos fiber in the air during the mixing and sanding of joint compounds. In the meantime it would probably be advisable for workers engaged in these operations to wear respirators. Once wetted or mixed the fiber is not subject to becoming airborne. Ready mix, for example, presents no hazard for the user, other than perhaps the sanding.

We are taking the necessary steps at our plants to comply with the OSHA requirements. However, the best overall solution is to eliminate asbestos from our products. Our first efforts were with textures because the spray application presented some special problems. We are about 90% converted to non-asbestos texture formulas. We are now directing our attention to our dry and ready mixed joint compounds.

We regard the development of low asbestos or non-asbestos products as a necessary step to expand our sales of joint compounds.

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Georgia-Pacific

INTERDEPARTMENTAL COMMUNICATION

DATE: August 14, 1973

TO: Mr. C. W. Lehnert LOCATION: Tigard

FROM: E. D. O'Neill LOCATION: Tigard

SUBJECT: GYPSUM ASSOCIATION SPECIAL COMMITTEE ON JOINT COMPOUND HAZARDS FIRST MEETING HELD IN CHICAGO ON AUGUST 8, 1973

Summary and Comments

Initial laboratory tests by USG and National indicate that nuisance dust and asbestos levels are above the limit as set by OSHA during the mixing operation of bagged joint compounds on the job. The dust and asbestos created by the sanding operation was thought to be below the required limits.

Because of the fact that these products contain asbestos, all should be labeled with the standard asbestos caution label. This includes ready mix. In addition special caution instructions should be included to warn of the dust hazard. These instructions are being reviewed by the Gypsum Association attorney.

On the basis of the above findings, it was agreed to monitor the dust, asbestos, and quartz content of actual job conditions to ascertain the extent of the problem.

In talking to the members of the committee, it was gathered that USG and National have placed emphasis at their plants on monitoring and control of dust and asbestos rather than an elimination of asbestos in formulations. It was their feeling that after asbestos, silica would be the target of OSHA and that it was a possibility that eventually all bagged joint compounds would be eliminated from the market. As the law stands all construction jobs are in violation of law because they do not monitor the dust content or keep records.

It is the writer's opinion we should be carrying out our own monitoring program, that we should set up procedures for record keeping at all plants, that each plant should be regularly inspected with particular emphasis on enforcing a strict housekeeping program. It appears that we may not be taking a sufficiently serious view of this whole problem and may be exposing the company to heavy fines from OSHA.

Attached is the agenda.

The following are the comments and results of the meeting:

1&2. Introduction and Evaluation and Events to Date

Both USG and National Gypsum have run preliminary lab surveys on the potential dangers to applicators

GP 009020

on the use of joint compounds. Their findings indicate that (a) applicators are probably exposed to excess dust and asbestos as defined by the law in the mixing operation of bagged joint compounds, (b) applicators may not be exposed to excess dust or asbestos during the sanding operation.

It was pointed out, however, that the applicator or drywall contractor is responsible to cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine whether every employee's exposure to asbestos fibers is below the limits as prescribed by OSHA.

It was felt that if the committee could supply results of actual typical field conditions to OSHA a variance could be obtained from the above section of the regulations.

It was also agreed that immediate action be taken to label ready mix and bags to protect the manufacturer from liability due to asbestos and dust; i.e., ready mix would be labeled with the caution asbestos label as recommended by OSHA and all products would have the following instructions - "When mixing and/or dry sanding, wear eye protection and respirator. Wet sanding or sponging is recommended where practical."

The final wording will be decided by the Gypsum Association attorney and the individual manufacturer's lawyers.

3&4. The scope of the special committee was defined as follows:

The scope of the special committee shall be to establish recommended practices for handling gypsum wallboard joint treatment compound in order to comply with current and anticipated environmental health standards.

5. Mr. Joe Volk from National Gypsum was elected as chairman and Mr. Herb Carlsen as secretary.

6. A discussion took place as to the requirements for a field test program to evaluate the actual hazards involved. It was agreed to test ready mix and topping compound in Denver. Members would be requested to submit samples for a test program. Confidentiality would be preserved and an individual's products would not be identified.

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7. Three independent test labs were suggested as possible alternatives to carry out the field tests and these are to be interviewed by the committee.

8. It was decided to try to run these tests not later than September 15, 1973, so that a preliminary report would be available for the Board of Directors meeting.

9. The next meeting takes place in Denver to coincide with the field tests. It is the writer's responsibility to ensure proper application methods are carried out by the applicator during these tests. The meeting was adjourned.

E. D. O.

EDO:jg

GP 009022

AGENDA

AD HOC COMMITTEE ON JOINT COMPOUND DUST
SHERATON O'HARE INN, CHICAGO, ILLINOIS

August 8, 1973

1. 9:00 a.m. - Introductions
2. - Evaluation of events to date
3. - Statement of Problem
4. - Scope of Committee (Policy statement)
5. - Election of Chairman
6. - Evaluation of data
7. - Development of a field testing program
8. - Selection of laboratories
9. - Establishment of program target dates (time table)
10. - Assignment of task groups or responsibilities
11. - Next meeting date
12. 5:00 p.m. - Adjournment

GP 009023



EVALUATION OF EXPOSURE TO ASBESTOS DURING MIXING AND SANDING OF JOINT COMPOUNDS

GYPSUM ASSOCIATION
Denver, Colorado

November 19, 1973

GP 009208

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EVALUATION OF EXPOSURE TO ASBESTOS DURING MIXING AND SANDING OF JOINT COMPOUNDS

GYPSUM ASSOCIATION
Denver, Colorado

INTRODUCTION

The Gypsum Association retained George D. Clayton and Associates to conduct an industrial hygiene survey at a test site located in Denver, Colorado. The purpose of the survey was to determine the concentrations of airborne asbestos to which workers were exposed during mixing and sanding of joint cement compounds and to interpret the results in terms of potential health hazards with particular reference to regulations promulgated under authority of the Occupational Safety and Health Act of 1970. This study was conducted on November 19, 1973 by Mr. Robert D. Soule of Clayton and Associates. Results of that study are reported herein.

BACKGROUND

The Gypsum Association, located at 1603 Orrington Avenue in Evanston, Illinois is a trade association which represents ten to fifteen industrial companies which are engaged in the manufacture of products incorporating gypsum or gypsum-like materials. As with most industrial concerns, the activities of the Gypsum Association have become more broad with the passage and implementation of federal regulations such as the Metal and Non-Metallic Mine Safety Act and the Occupational Safety and Health Act. Technical committees composed of personnel from companies comprising the Gypsum Association have been established with particular interest in the occupational safety and health field. Of particular concern in this respect was the potential hazard associated with exposure of workers to airborne asbestos during mixing and sanding of compounds used to seal cracks and joints formed during installation of wallboard material. Although the specific formulations used by the various companies manufacturing and supplying the joint compound vary, it is understood that essentially all of them incorporate asbestos in the product whether as a dry compound or a ready-mix product.

In order to evaluate the exposure of workers to asbestos during handling and use of the joint compound products, the Gypsum Association decided to undertake a test program during which several products would be mixed and sanded. George D. Clayton and Associates was retained to collect and analyze samples which would represent the exposure of workers engaged in the study. The tests were performed on November 19, 1973 in a development of townhouses known as King's Mill Townhouses, which were under construction in a suburban area north of Denver, Colorado.

POTENTIAL HEALTH HAZARD ASSOCIATED WITH EXPOSURE TO ASBESTOS

Asbestos is a generic term referring to various mineral silicates. The types used most widely in industrial applications include chrysotile, or "white asbestos" (a hydrated magnesium silicate), amosite,

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or "grey asbestos" (an iron magnesium silicate), crocidolite, or "blue asbestos" (a sodium iron silicate), tremolite (a calcium magnesium silicate), and anthophyllite (another iron magnesium silicate). Of these, chrysotile accounts for over 90 percent of the total usage of asbestos in this country, with amosite and crocidolite being the only other types used to any significant extent.

Asbestos exists naturally in bundles of extremely fine fibers which can be subdivided easily into many smaller fibers. The potential health hazard associated with exposure to asbestos is that of inhalation of airborne fibers resulting in a type of pneumoconiosis referred to as "asbestosis." Small asbestos fibers can pass readily through the upper respiratory tract and be deposited in the terminal bronchioles of the lung. There, they produce a local irritation which the body attempts to overcome by initiating a tissue response resulting in the encapsulation of the fibers and consequent formation of "asbestos bodies." If sufficient quantities of fibers are inhaled over an extended period of time, a generalized diffuse peribronchiolar fibrosis can develop. This pulmonary fibrosis can impair the transfer of oxygen across the aveolar membranes and result in respiratory insufficiencies, or even cardiac failure. It has been determined, through toxicological and epidemiological studies, that long fibers, 20 to 50 micrometers in length, are most active in the production of the fibrosis. Fibers shorter than about two micrometers in length, are practically without an irritating effect. There is some evidence that other minerals having fibrous characteristics can produce similar reactions.

Many recent studies have indicated an association between exposure to asbestos in both industrial and urban atmospheres and an increase in a relatively rare type of lung cancer known as mesothelioma. Although it has not been possible to establish a connection with asbestos in all cases of this disease, there is a strong correlation between exposure to crocidolite and occurrence of mesotheliomas. Other types of asbestos have been implicated to a much lesser extent. However, this "new hazard" has received much public attention because it has been suggested that very minimal, non-occupational exposure can be sufficient to produce the disease in some individuals.

For many years the American Conference of Governmental Industrial Hygienists has recommended a threshold limit value (TLV) of five million particles per cubic foot of air (mppcf) for all types of asbestos-bearing dusts containing less than one percent crystalline silica. The threshold limit value is defined as the concentration of an airborne contaminant to which it is believed that nearly all workers can be exposed for continuous and repeated work days without experiencing adverse effects. The TLV of five mppcf was based on the impinger sampling technique which was selected as the standard method in the early epidemiological studies of occupational exposure to asbestos. With this method, air is drawn through an impinger containing water and the total particles (both grains and fibers) in an aliquot of the sample, are counted using light-field microscopic techniques.

Within recent years, because of the increasing concern about asbestos in the environment and the resulting need for a more relevant sampling method, the American Conference of Governmental Industrial

GP 009210

Hygienists has proposed a TLV of five fibers (greater than five micrometers in length) per cubic centimeter of air. This standard is based on the membrane filter technique with actual microscopic fiber counting at 400-450X magnification using phase contrast illumination.

The Occupational Safety and Health Administration (OSHA) has established the above concentration (five fibers, greater than five micrometers in length, per cubic centimeter of air) as an emergency standard and have announced that, effective July 1, 1976, the acceptable limit for an eight-hour, time-weighted average exposure will be reduced to ten fibers [illegible]. In addition, OSHA has established the concentration of ten fibers (greater than five micrometers in length) per cubic centimeter of air as an acceptable ceiling concentration. Workers shall not be exposed to concentrations of asbestos in excess of this value, regardless of duration of exposure.

SAMPLING AND ANALYTICAL METHODS

The air sampling conducted to evaluate exposures of workers to asbestos was all of the "breathing zone" type. These samples were collected by drawing air through 37-mm diameter membrane filters (Millipore Type AA) at a rate of about two liters per minute using small, battery-operated pumps (Mine Safety Appliances Company, Model G). The sampling units were worn by the workers engaged in either mixing or sanding the joint compound; the pump was attached to the belt and the sampler head fastened on the outside of the worker's shirt at approximate breathing zone height. Thus, these samples were representative of the time-weighted average conditions to which the men were exposed during the sampling period. The sampling head consisted of a three piece cassette (Millipore); during sampling the face cap was removed and the filter was used in an "open face" mode with the filter positioned slightly downward so as to minimize dust falling directly onto the filter.

Sampling was conducted for the entire duration of the mixing operations but because of the higher anticipated concentrations associated with sanding of the joint compounds it was decided to change filters approximately every ten minutes. Sampling during the sanding on the various joint compounds was conducted over a total period of sixty minutes. Therefore six consecutive ten-minute samples were obtained for each sanding test. In addition to the ten-minute tests, samples were collected over thirty-minute periods as well, i.e., two consecutive 30-minute samples for each sanding test. After collection of each sample the filter cap was replaced and the cassette, or sampler head, was sealed immediately and prepared for transfer to the analytical laboratory.

The method of counting asbestos fibers was essentially the same as that used by the U.S. Public Health Service for the enumeration of asbestos dust on membrane filters. The description of this method first appeared in an article written by G.H. Edwards and J.R. Lynch and appeared in the Annals of Occupational Hygiene, Volume 2, pages 1-6 (1968).

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In summary, the method consisted of the following steps.

A pie-shaped section of each sample was mounted on a standard microscope slide using a high viscosity solution of membrane filter in a 1:1 mixture of diethyl oxalate and dimethyl phthalate to render the filter transparent. The asbestos fibers which were on the surface of the filter were then counted using a 10X eyepiece and a 40X objective with phase contrast illumination.

A number of fields, selected at random across the sample, sufficient to reveal a minimum of 100 fibers were examined and fibers greater than five micrometers in length were counted. Any particle having an aspect ratio of three or greater was considered to be a fiber. Although it was conceivable that there would be fibers of paper or other materials present on the filters which would have been dislodged from the wallboard during the sanding operation it did not appear that these were of any adverse consequence during the analysis of the samples. Although it is realized that the counting technique is not specific in terms of being able to identify the chemical nature of the fibers present in the sample, all of the fibers observed in these samples appeared to have physical features characteristic of asbestos fibers.

For those samples collected over a thirty-minute period, and which were too heavily loaded to evaluate directly under the microscope, the collected material on the filters was dislodged in a highly purified distilled water bath using an ultrasonic unit (Dynasonic Corporation, Model G6 generator and Model T6 tank) and diluted to one liter. An aliquot of the resulting suspension was drawn, passed through a membrane filter (Millipore Type HA) and was then analyzed according to the procedure described above.

PRESENTATION OF RESULTS

A total of four joint compound products were used during this study. These products (two dry mix and two "ready mix") were supplied by two manufacturers whose identities were not known to the investigator. The products were identified by code (2D, 2R, 4D and 4R), a number referring to the supplier and the letter indicating whether the product was a "dry" or "ready-mix" compound.

The results of the sampling program conducted during the mixing of the two dry mix products and sanding tests on all four joint compounds are presented in Tables I through IV. Examination of these data reveals the following:

1. During mixing of Joint Compound 2D, the worker was exposed to a concentration of 31.4 fibers, greater than five micrometers in length, per cubic centimeter of air.

2. The amount of total particulate generated during the sanding operation on Joint Compound 2D was so great that direct

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analysis of the ten-minute samples was not possible. Analysis of the thirty-minute samples, which were redeposited, indicated an average concentration of 39.4 fibers, greater than five micrometers in length, per cubic centimeter of air.

3. The results of analyzing four of the six ten-minute samples collected during sanding on Joint Compound 2R indicated an average concentration of 4.2 fibers per cubic centimeter; two of the samples were too heavily loaded to analyze directly. Results of analysis of the two thirty-minute samples collected during the sanding on Joint Compound 2R indicated an average concentration of 11.1 fibers per cubic centimeter, a factor of over 2.5 times as high as the average obtained from analysis of the ten-minute samples.

4. The sample obtained during the mixing of Joint Compound 4D indicated a concentration of 7.6 fibers, greater than five micrometers in length, per cubic centimeter of air.

5. Results of analyzing four of the six ten-minute samples collected during the sanding on Joint Compound 4D indicated an average concentration of 4.4 fibers per cubic centimeter. Analysis of the two thirty-minute samples, which were subjected to the redepositing procedure, indicated an average concentration of 14.8 fibers per cubic centimeter, a factor of 3.4 times as high as results obtained fron the ten-minute samples.

6. The results of analysis of five of the six samples obtained during the sanding on Joint Compound 4R indicated an average concentration of 10.8 fibers per cubic centimeter. Results of analysis of the two thirty-minute samples indicated an average concentration of 9.7 fibers per cubic centimeter, a value essentially the same as that obtained from analysis of the ten-minute samples.

7. Six of the thirteen ten-minute samples obtained during sanding on the four joint compounds indicated concentrations in excess of five fibers per cubic centimeter. Both mixing operations generated asbestos concentrations in excess of five fibers per cubic centimeter.

8. Two of the thirteen ten-minute samples collected during the sanding tests indicated concentrations in excess of ten fibers per cubic centimeter, the acceptable ceiling concentration. One of the two mixing operations generated an asbestos-in-air concentration in excess of ten fibers per cubic centimeter.

9. Of the four products tested, sanding on 2R and 4D resulted in concentrations less than, but approaching, the current acceptable limit for continuous exposure of workers, five fibers per cubic centimeter. Product 4R consistently produced very high concentrations of total dust which obscured the asbestos fibers on the samples.

GP 009213

PLAINTIFF'S EXHIBIT 43717

CONCLUSIONS

The following conclusions are presented on the basis of observations and measurements made during the study reported herein.

1. Based on the results of the ten-minute samples, it is apparent that the exposures of workers engaged in mixing and sanding of the various joint compounds used during this test would be to concentrations approaching or exceeding five fibers, greater than five micrometers in length, per cubic centimeter of air.

2. It is clear that persons engaged in the mixing and sanding of joint compounds similar to those used during this test would be exposed to concentrations of airborne asbestos in excess of two fibers per cubic centimeter during the entire course of their work. This value is the proposed acceptable limit for an eight-hour time-weighted average exposure to asbestos which is scheduled to become effective July 1, 1976.

3. With the exception of the tests conducted during sanding on joint compound 4R the results of analysis of the thirty-minute samples, using the redeposition technique, were consistently higher than those obtained by direct analysis of the ten-minute samples by a factor of 2-1/2 to 3-1/2. Therefore, it appears that use of the redeposition technique would result in the apparent concentrations of asbestos in air being higher than actually present and would therefore err on the "conservative" side.

4. Discounting the results obtained by analysis of the thirty-minute samples, for which the redeposition technique was used, three of the samples collected (mixing of 2D and sanding on 4R) indicated concentrations in excess of ten fibers per cubic centimeter and are therefore a concern as peak exposures. With those exceptions, the problem is one of controlling the time-weighted average exposures of workers to asbestos. In that respect, it must be pointed out that the sampling results reported herein are indicative of the exposures of workers during the mixing or sanding operations and not their time-weighted average exposure for a full workday.

RECOMMENDATIONS

1. The results of sampling reported herein should be analyzed in conjunction with a study of the work practices and routine of persons engaged in mixing, sanding or otherwise being exposed to joint compounds similar to those used in this study. In this way a true evaluation of the time-weighted average exposure of such workers to asbestos can be made. If it is true that, as reported by workers used during this test, it would be unlikely for an individual to mix or sand on the joint compounds for greater than two hours per workday, then the time-weighted average exposure of such workers to asbestos likely would be within acceptable limits. Of course, the problem of controlling any

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exposures to below ten fibers per cubic centimeter would still have to be contended with.

From the standpoint of being able to eliminate or minimize the problem of excessive concentrations of asbestos being generated by handling and use of the joint compounds, consideration should be given to the following aspects.

a. The most effective means of eliminating the asbestos problem obviously would be to eliminate asbestos from the joint compound formulations if this is feasible. Although the specific role that asbestos plays in the joint compound formulations is not clear it is understood that manufacturers of joint compounds consider it necessary that asbestos be in the formulations.

b. From an engineering standpoint, it may be necessary to implement the following measures in conjunction with mixing and sanding of the joint compounds containing asbestos.

   i. Mixing of the joint compounds could be done in such a way that the material is more effectively wetted as it is removed from the containers or could be done within an enclosure, with or without mechanical ventilation, so as to minimize the amount of asbestos fibers released into the breathing zone of the workers.

   ii. Although the results of the air sampling reported herein indicate concentrations of asbestos fibers in excess of acceptable limits, either those currently enforced or those proposed to be made effective in July, 1976, it was obvious during the study that the sanding process in general has associated with it exposure of the worker to tremendously high concentrations of total dust. Therefore, if means were implemented to maintain the exposure of the workers to total particulate to within acceptable limits there would be an inherant control of the asbestos problem as well. Although more extensive in nature, engineering control of the total dust generated by the sanding operations is feasible. Such control techniques would include, but not be limited to, the use of a wet sanding technique and/or use of a portable local exhaust ventilation system incorporating, as the air moving device, a unit similar to common industrial vacuum cleaners and bag collectors.

The next phase of the testing program to control workers' exposures to asbestos during use of the joint cement compounds logically would be evaluations of the various potential engineering control concepts indicated or inferred above.

s report prepared by: Robert D Soule

Robert D. Soule, P.E.
Vice-President, Industrial Hygiene Services

GP 009215

GEORGE D. CLAYTON & ASSOCIATES
INDUSTRIAL HYGIENE SAMPLING SUMMARY

Client Gypsum Association — Material Asbestos

1973 Date	Sample No.	JOINT COMPOUND 2D Description (a)	Sampling Period Start	Sampling Period Stop	Sample Weight	Sample Volume Liters	Concentration Fibers >5μm/cc		
11/19	2D-M	Mixing of compound (b)	09:28	09:34		13	31.4		
11/19	2D-S-1	Sanding on compound (c)	11:57	12:27		60	35.2**		
11/19	2D-S-2	Sanding on compound (c)	11:57	12:07		-	*		
11/19	2D-S-3	Sanding on compound (c)	12:07	12:17		-	*		
11/19	2D-S-4	Sanding on compound (c)	12:17	12:27		-	*		
11/19	2D-S-5	Sanding on compound (c)	12:27	12:57		60	43.6**		
11/19	2D-S-6	Sanding on compound (c)	12:27	12:37		-	*		
11/19	2D-S-7	Sanding on compound (c)	12:37	12:47		-	*		
11/19	2D-S-8	Sanding on compound (c)	12:47	12:57		-	*		

(a) All samples were obtained in the breathing zone of the workers.
(b) Mixing of Compound 2D was done by Mr. Harold McDowell in King's Mill Townhouse Unit U-81.
(c) Sanding of Compound 2D was done by Mr. James Pasquariello in King's Mill Townhouse Unit U-77. Psychrometric conditions in U-77 at 11:45 were 56°F dry bulb, 41°F wet bulb (22% relative humidity)

too heavily loaded for direct analysis
material on filter was taken into suspension and an aliquot
redeposited for analysis

PLAINTIFF'S EXHIBIT 4376

GP 009216

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Union Carbide trial exhibit UC-5448: Affidavit of Andrew McCampbell Gibson (Alston & Bird) Authenticating U.S. G...
ACL Doc 19881 - Page 75 of 93

GEORGE D. CLAYTON & ASSOCIATES
INDUSTRIAL HYGIENE SAMPLING SUMMARY

Client Gypsum Association Material Asbestos

1973 Date	Sample No.	JOINT COMPOUND 2R Description (a)	Sampling Period Start	Sampling Period Stop	Sample Weight	Sample Volume Liters	Concentration Fibers >5µm/cc		
11/19	2R-S-1	Sanding compound (b)	15:48	16:18		60	12.3**		
11/19	2R-S-2	Sanding compound (b)	15:48	15:58		20	4.5		
11/19	2R-S-3	Sanding compound (b)	15:58	16:08		20	4.2		
11/19	2R-S-4	Sanding compound (b)	16:08	16:18		20	4.1		
11/19	2R-S-5	Sanding compound (b)	16:18	16:48		60	9.9**		
11/19	2R-S-6	Sanding compound (b)	16:18	16:28		20	*		
11/19	2R-S-7	Sanding compound (b)	16:28	16:38		20	3.8		
11/19	2R-S-8	Sanding compound (b)	16:38	16:48		20	*		

(a) All samples were obtained in the breathing zone of the workers.

(b) Sanding of Compound 2R was done by Mr. David Potter in King's Hill Townhouse Unit U-79. Psychrometric conditions in U-79 at 15:45 were 39°F dry bulb, 35°F wet bulb (66% relative humidity).

* too heavily loaded for direct analysis

** material on filter was taken into suspension and an aliquot redeposited for analysis

PLAINTIFF'S EXHIBIT 11-3776(b)

GP 009217

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ACL Doc 19881 · Page 76 of 93

GEORGE D. CLAYTON & ASSOCIATES
INDUSTRIAL HYGIENE SAMPLING SUMMARY

Client Gypsum Association — Material Asbestos

1973 Date	Sample No.	JOINT COMPOUND 4D Description (a)	Sampling Period Start	Sampling Period Stop	Sample Weight	Sample Volume Liters	Concentration Fibers >5µm/cc		
11/19	4D-M	Mixing compound(b)	09:09	09:17		14.4	7.6		
11/19	4D-S-1	Sanding compound(c)	10:20	10:50		60.0	15.5**		
11/19	4D-S-2	Sanding compound(c)	10:20	10:29		18.0	5.2		
11/19	4D-S-3	Sanding compound(c)	10:29	10:40		22.0	*		
11/19	4D-S-4	Sanding compound(c)	10:40	10:50		20.0	3.7		
11/19	4D-S-5	Sanding compound(c)	10:50	11:00		20.0	4.1		
11/19	4D-S-6	Sanding compound(c)	10:50	11:20		60.0	14.1**		
11/19	4D-S-7	Sanding compound(c)	11:00	11:10		20.0	*		
11/19	4D-S-8	Sanding compound(c)	11:10	11:20		20.0	4.7		

(a) All samples were obtained in the breathing zone of the workers.
(b) Mixing of Compound 4D was done by Mr. Harold McDowell in King's Hill Townhouse Unit U-80.
(c) Sanding of Compound 4D was done by Mr. James Pasquariello in King's Hill Townhouse Unit U-76. Psychrometric conditions (dry and wet bulb temperatures) were not recorded.

EXHIBIT 1637(ii)

* too heavily loaded for direct analysis
** material on filter was taken into suspension and an aliquot redeposited for analysis

GP 009218

Union Carbide trial exhibit UC-5448: Affidavit of Andrew McCampbell Gibson (Alston & Bird) Authenticating U.S. G...
ACL Doc 19881 · Page 77 of 93
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GEORGE D. CLAYTON & ASSOCIATES

INDUSTRIAL HYGIENE SAMPLING SUMMARY

Client Gypsum Association Material Asbestos

1973 Date	Sample No.	JOINT COMPOUND 4R Description (a)	Sampling Period Start	Sampling Period Stop	Sample Weight	Sample Volume Liters	Concentration Fibers >5µm/cc		
11/19	4R-S-1	Sanding compound (b)	14:31	15:01		60.0	11.3**		
11/19	4R-S-2	Sanding compound (b)	14:31	14:41		20.0	6.3		
11/19	4R-S-3	Sanding compound (b)	14:41	14:51		20.0	7.5		
11/19	4R-S-4	Sanding compound (b)	14:51	15:01		20.0	19.9		
11/19	4R-S-5	Sanding compound (b)	15:01	15:31		60.0	8.1**		
11/19	4R-S-6	Sanding compound (b)	15:01	15:11		20.0	5.3		
11/19	4R-S-7	Sanding compound (b)	15:11	VOID		-	-		
11/19	4R-S-8	Sanding compound (b)	15:18	15:31		26.0	15.0		

(a) All samples were obtained in the breathing zone of the workers.
(b) Sanding of Compound 4R was done by Mr. David Potter in King's Mill Townhouse Unit U-78. Psychrometric conditions in U-78 at 14:45 were 44°F dry bulb, 38°F wet bulb (68% relative humidity).

** material on filter was taken into suspension and an aliquot redeposited for analysis

EXHIBIT 11e37021

GP 009219

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ACL Doc 19881 - Page 78 of 93

EVALUATION OF EXPOSURE TO ASBESTOS DURING MIXING AND SANDING OF JOINT COMPOUNDS

GYPSUM ASSOCIATION
Denver, Colorado

November 19, 1973

GP 009220

R & D 347

GP 10-1

GEORGIA-PACIFIC

INTERDEPARTMENTAL COMMUNICATION

DATE: August 17, 1973

TO: [redacted]

LOCATION:

FROM: G. E. Wilson

LOCATION: Portland

SUBJECT: Asbestos Fiber

You have each received a memo from Bill Lehnert along with a report from Gene O'Neill on a Gypsum Association meeting concerning the investigation of the hazards pertaining to the mixing and sanding of joint compounds. This report, coupled with our experience at Akron, would seem to point out that we need to take immediate steps to monitor all of our joint cement operations from the asbestos fiber standpoint and take whatever steps are necessary to get the fiber level in the air down to acceptable levels.

[redacted]

G. E. W.

GEW:jb

* TO: Messrs. E. B. Hollingsworth - Wilmington
T. W. Richards - Tigard Lab
J. DiLorenzo

cc: Mr. C. W. Lehnert - Tigard Lab

COPY

[redacted]

GP 009039

Georgia-Pacific

intracompany memo

to	Mr. G. E. Wilson	location	Portland
from	O. E. Burch	location	Portland
subject	ASBESTOS - JT CEMENT PRODUCTS	date	May 17, 1974

Attached appeared in the Walls & Ceilings magazine, May issue.

This is the first time I have seen actual cases reported.

OEB/mf O.E.B.

CC Messrs: C. W. Lehnert - Tigard Lab
J. Hurd - Portland
M. Fink - Tigard Lab
D. C. Corkill, Portland ← [redacted]

encl.

PLAINTIFF'S EXHIBIT Px-14

GP 009267

Is CPSC A Sleeper?

The construction industry had little idea what was over the horizon when the Occupational Safety and Health Act was passed by congress. In due course, OSHA developed into a major source of concern for all contractors. Everybody's for safety, of course, and few thought passage of the federal law would make very much difference in conducting a business. It's made a whale of a big difference.

Congress has created another bureau which hasn't received a great deal of attention. Maybe it won't have too much impact on construction. On the other hand, it could become a bureaucratic giant affecting almost every business.

It's the Consumer Product Safety Commission, which believes the home is second only to the automobile as the most dangerous "product" on the market today. If CPSC is all that worried about homes, why not offices, warehouses, and all buildings?

The Commission reasons that since it has jurisdiction over appliances, it follows that it has authority over wiring. The wiring's attached to structural framing, so that too must come within their jurisdiction. By any type of wall and ceiling construction.

Perhaps it won't happen. But then, whoever thought OSHA would become so important?

Asbestos Danger Cited

Taping and spackling compounds used in drywall finishing may expose workers to dangerous levels of asbestos fibers, according to OSHA officials.

The warning followed an examination of 17 members of a New York City painters' local. Tests showed the lungs of nine painters had X-ray evidence of fibrosis, or excessive secretion build-up in the lungs.

Employer groups and unions are being asked to alert workers to the potential hazard, said federal safety authorities.

Louis Moosbrugger Passes

Longtime IaWCC member Louis J. Moosbrugger died in Lake Worth, Florida, in February. He founded Northwestern Plastic Art, Milwaukee, in 1921, and developed the Nu-Stone system of simulated stone masonry executed in plaster. Northwestern Plastic Art & Nu-Stone Co., Inc., is now headed by his son, Robert.

When fireproofing with Zonolite

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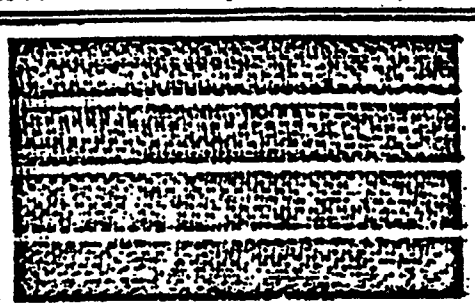
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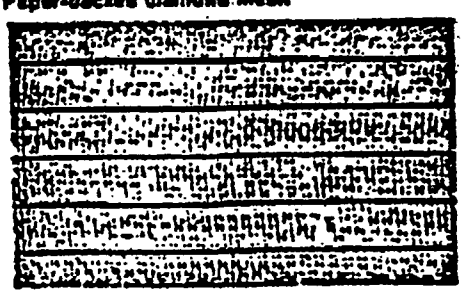
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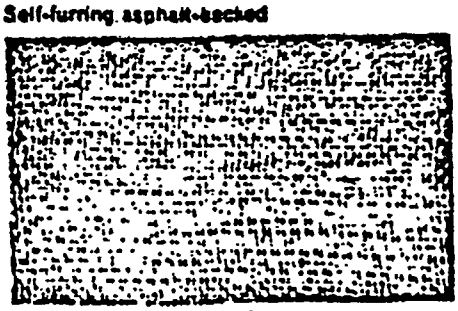
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GP 009268

Georgia-Pacific

company memo

	Mr. D. C. Corkill	location	Portland
rom	O. E. Burch	location	Portland
ubject	WARNING LABELS Joint Cement Products	date	June 4, 1974

After discussing with our attorneys our warning label program for Joint System Products, they make the following recommendations:

READY-MIX

1. The labels previously proposed are O.K. except that the Caution should be double the size previously proposed, and the word Caution should be underlined.

2. We presently print directions on two sides of the 5 gallon can. We should have the caution label under the number 5 step, on both sides, or eliminate one set of the directions.

BAG GOODS

The next time we print bags we should add the following to the caution label:

"When mixing or sanding use approved respirator".

OEB/mf O.E.B.

CC Messrs: J. Hurd, Portland
Matt Fink, Tigard Lab
C. W. Lehnert, Tigard Lab
Ed Aasen, Portland ← THIS COPY FOR
T. Withycombe, Portland
A. T. Niebergall, Portland
G. S. Nelson, Portland

GP 009452

Georgia-Pacific

intracompany memo

to	Mr. W. A. Nalbone	location	Akron, N. Y.
from	J. R. Hurd	location	Portland
subject	Asbestos Caution Labels	date	June 7, 1974

COPY

This memo is in response to your letter dated June 3, 1974 concerning the above subject.

I appreciate your concern over the changes in the asbestos caution labels; however, our attorneys are also deeply concerned over recent findings of asbestosis in workers in the construction industry which is a result of working with joint system products. The new wording for the caution labels is in compliance with OSHA regulations. The fact that the wording, "Respirator Protection Required When Sanding" was added will only give us additional protection if any liability threats are made against our products. Our sales effort should not be affected, as the implication of the OSHA wording is to wear a respirator while working with these products anyway.

You asked if we as Georgia-Pacific representatives are in a position to recommend the type of approved respirators to be used to our customers. I feel we should be prepared to answer and discuss any questions dealing with our products. If we can give assistance to our customers as to what types of respirators are approved by OSHA, I see nothing wrong in doing so.

I am enclosing a copy of the Occupational Safety and Health Standards which deals with the subject for your reference if you do not already have a copy.

If I can be of further assistance in clarifying this matter for you, please contact me.

Jim

J. R. H.

JRH:jb

Enclosure

cc: Messrs. J. D. Rauch - Akron, N. Y.
E. B. Hollingsworth - Wilmington
O. E. Burch
C. W. Lehmert - Tigard Lab
H. W. Peale - Wilmington

GP 009271

GP 0-9

Georgia-Pacific

INTERDEPARTMENTAL COMMUNICATION

DATE: June 10, 1974

TO: Mr. Ed Sing

LOCATION: Acme

FROM: C. W. Lehnert

LOCATION: Tigard

SUBJECT: ASBESTOS CAUTION LABELS

cc: Mr. O. E. Burch - Portland
Mr. T. W. Richards - Tigard
Mr. J. R. Hurd - Portland
Mr. E. L. Aasen - Portland

The labels you have been using, which you sent me copies of, comply with the OSHA requirement but do not have the additional statement concerning the recommendation for use of respirators.

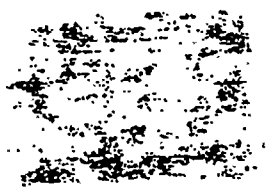
I beleive it is intended to have you continue using the existing labels until such time as new labels are furnished which will contain the statement concerning the use of respirators.

If you have further questions, I would suggest that you direct them to Mr. Hurd.



CWL:elz

PRIVILEGED INFORMATION HAS BEEN REDACTED FROM THIS DOCUMENT. SEE PRIVILEGE LOG FOR DESCRIPTION OF REDACTED INFORMATION.



GP 009462

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Dust Survey - Jersey City

CHICAGO - August 13, 1936

Mr. W. L. Keady,
Vice President,
Office.

We have a comprehensive report of dust conditions in our Jersey City plant and a report on the X-rays of the employees examined at that plant by Dr. Gardner's organization.

In brief the findings are:

1. Diagnosis of asbestosis for five men.
2. Possibly five additional men have asbestosis but necessary to confirm by clinical correlation.
3. Serious asbestos dust hazard under present operations.

WHAT CONSTITUTES DUST HAZARD:

Dr. Gardner points out that various authorities have tentatively suggested a concentration of five million particles of free silica per cubic foot of air as limits above which a silicosis hazard might exist, and this value has met with some recognition.

There is no standard for safe concentration of asbestos dust comparable to the value just given for free silica dust. However, Dr. Gardner quotes the results of a survey made in four asbestos fabricating plants and reported in 1935 in Bulletin #42, Department of Labor and Industry of Pennsylvania. The incidence of asbestosis among workers with more than five years exposure:

Average Dust Concentration For Each Group Studied	Percentage of Each Group Having Asbestosis
44 million particles per cu. ft. air	73% (8 out of 11 persons)
17 " " " " "	27% (4 " " 15 ")
8 " " " " "	10% (2 " " 20 ")

The authors of the report conclude that it is not possible from their findings to establish the maximum safe condition of asbestos in the air.

DUST ENCOUNTERED IN PLANT

Among them are asbestos, infusorial earth, slate, clay, soapstone, mica and limestone. Dr. Gardner advises some of these minerals are definitely

PLAINTIFF'S EXHIBIT USG 41

USG 41

hazardous; others are probably not very dangerous although conclusive proof is lacking; and still others have been shown to be practically harmless.

DUST CONCENTRATION IN PLANT

Dr. Gardner considers concentration of an excess of five million particles per cu. ft. of air hazardous. The following conditions were found:

1. #1 bin in building #1 where man was shoveling asbestos - 296 million particles per cu. ft. air.

2. Inside #3 bin where bags of asbestos, clay, etc., were opened and contents pushed into screw conveyors the count was 22 million particles.

3. Over the opening of the fourth floor through which the bins are supplied the concentration was 79 million particles.

4. Concentration where asbestos boards are sawed was 8 million particles.

5. Loading bags with asbestos cement on first floor gave a concentration of 261 million particles.
This is highly hazardous.

Other hazardous counts were also given.

The summary and conclusion from Dr. Gardner's report, looking to prevention, lists the men who should wear respirators until dust conditions are brought within safe limits and gives detail recommendations on exhaust systems, prevention of dust leakage and ventilation.

OTHER COMMENTS

In addition to asbestosis, there are a number of other physical disabilities among the men such as heart disease, tuberculosis, syphilis, etc. There are cases with active manifestations of tuberculosis.

Case #270 (M. Tarby) has a unilateral chronic tuberculosis. Possibility of sanatorium treatment of this man should be considered.

Case #344 (Witkowski). In view of the fact that this individual is only 19 years of age, his condition should be investigated further to determine whether treatment is required.

There seems to be no suggestion of a silicosis hazard at Jersey City. It may be alleged, if cases arise, that those with tuberculosis have con-

PLAINTIFF'S EXHIBIT 1507 1(2)

tracted this disease as a result of their occupation.

RECOMMENDATIONS

1. That immediate steps be taken to provide respirators for those men covered by Dr. Gardner's recommendation. I am suggesting to Mr. Meade and Mr. Reubert that this be done.

2. That prompt action be taken to install necessary dust prevention and ventilation equipment. I am also suggesting to Mr. Reads and Mr. Reubert that this be done.

COMPENSATION FOR OCCUPATIONAL DISEASES

Certain named diseases such as mercury poisoning, lead poisoning, etc. come under the Compensation Act of New Jersey. However, silicosis and asbestosis are not named and any claims arising out of these diseases might be under common law.

INSURANCE PROTECTION

For diseases listed under the Compensation Act, we have unlimited insurance protection. Our insurance for occupational disease claims which might be made under common law is placed with the Continental Casualty Company for the primary coverage of $5,000 for one person or aggregate claims of $15,000 in one year. Our excess coverage of $45,000 for one person and $155,000 aggregate for one year is insured with Lloyds. If claims are filed both of the companies may cancel the occupational disease coverage.

FOR CONSIDERATION

1. What action shall we take on notifying the men who have been examined of the various diseases which they have?

2. What action shall we take in connection with the continuation of the employment of our men who have occupational and other diseases?

3. What action shall we take on the tuberoular cases?

TRP:ZGC

General Service Manager

PLAINTIFF'S EXHIBIT 1567-C



TO: #147-1 - Mr. C. C. Gramer 12/14/73

FROM: #151 - Mr. J. N. Walker

SUBJECT: WARNING LABELS FOR JOINT TREATMENT AND TEXTURE PAINTS

I recommend that all joint compounds and texture paints that contain asbestos have labels that include asbestos warning information. I feel that this would be a good move, even though some of the products do not require the label by current federal regulations.

We shall probably need a meeting to determine the specific information to be provided the customer.

JNW:mm

cc: #146 - Mr. W. R. Weidman
#149 - Mr. M. R. Helton
#159 - Mr. E. C. Mobbs
#151 - Dr. L. T. Eby
Mr. K. S. Freeman
Mr. E. Maynard

MINUTES
SAFETY COMMITTEE MEETING
CHARTER HOUSE HOTEL
BUFFALO, NEW YORK

September 20, 1966

Mr. F. H. Zimmerman, chairman of the Gypsum Association Safety Committee, called the meeting to order at the Charter House, Buffalo, New York at 9:00 a.m. Those in attendance were:

C. Baranowski	Georgia-Pacific Corporation Bestwall Gypsum Division
M. F. Fink	Georgia-Pacific Corporation Bestwall Gypsum Division
E. J. Carlson	The Flintkote Company
E. Epke	National Gypsum Company
F. H. Zimmerman	National Gypsum Company
J. B. Fitzwilliam	The Ruberoid Co.
P. D. Fix	United States Gypsum Company
G. E. Krug	United States Gypsum Company
A. V. Abnee, Jr.	Gypsum Association
F. J. Rogers	Gypsum Association

1. GYPSUM ASSOCIATION DIRECTORS' TASK FORCE PROGRAM

Mr. Abnee reviewed the background and objectives of the directors' task force program and the slide-tape presentation was shown to the committee.

2. SAFETY BULLETIN

The increased distribution of the Safety Bulletin to all levels within the industry was found to be acceptable with maximum coverage now being afforded.

ABATE PRODUCTION
MAY 94

It was the consensus of the committee that the bulletin should not become too sophisticated and that editorials should be the responsibility of all member plants. It was suggested that all companies encourage worker and production supervisory articles. The chairman suggested individual companies forward safety articles and accident prevention reports, with pictures where possible, to the Safety Bulletin editor.

The committee agreed that the Gypsum Association prepare a questionnaire to be mailed to the various member plant managers to check the mailing address and survey their interests in the bulletin.

The committee requested that articles pertaining to "off the job" safety be included in the forthcoming issues. The secretary indicated that such articles would be considered for the next edition.

The bulletin format was agreed to be satisfactory; however, the committee suggested the editor make any changes he feels necessary.

3. DUAL "CERTIFICATE OF MERIT" AWARD

The committee reviewed the last three editions of the Safety Bulletin and selected two articles by ballot. They are: "A Coffee-Break Finger Test" by Jack Weber, United States Gypsum Company (April 1966 issue) and "Beware That 1001st Time" by D. W. Cowan, The Celotex Corporation (June 1966 issue). The awards will be mailed by the Association to supervisory personnel for presentation.

4. AIR AND STREAM POLLUTION

The committee discussed federal legislation against exhausting smoke of an injurious nature into the atmosphere together with new laws affecting air and stream pollution. It was agreed that the Gypsum Association and their legal counsel keep abreast of these laws and inform the committee of any changes.

State and local laws governing smoke and water pollution are strengthening, it was agreed. These laws require further analysis on the local level by the member plants in their individual areas.

The chairman mentioned a potential problem area in the industry where asbestos is used. Government investigations indicate the possibility of the use of asbestos as a cause of lung diseases in industry. Payment of claims arising from this could cost our industry many dollars unless counteraction is taken. The chairman indicated that he would inform the Association directors of this potential problem at the Semiannual Meeting in October and recommend that action be taken against dust problems in the industry.

5. LABOR MARKET AND EMPLOYMENT

The tight labor market has necessitated reducing the caliber of men hired as far as mental and medical standards are concerned. For the industry to attract employees, standards are being waived.

ABATE PRODUCTION MAY 93

Due to this tight labor market problem and the accompanied lowering of pre-employment standards, the industry should expect without much surprise an increase in accident rates. The chairman suggested that each member plant increase their safety efforts to counteract this expected increase as much as possible. The committee agreed that the chairman should make a report to the Association directors at the Semiannual Meeting in October and explain the effects the tight labor market will have on our compensation rates and overall safety program.

It was agreed use of X rays and audiometric tests in pre-employment physicals are necessary and have more than paid off in reducing compensation claims.

6. SAFETY MOVIE

Discussion of labor market and pre-employment problems led to a committee conclusion that there was a great need to train new employees for the various operations in our industry. The chairman showed slides depicting various industry injury situations upon which guidelines an orientation film might be produced.

PLAINTIFF'S EXHIBIT 1550

MINUTES OF THE
SAFETY COMMITTEE MEETING
MARRIOTT MOTOR HOTEL
SADDLE BROOK, NEW JERSEY

SEPTEMBER 19, 1967

Mr. F. H. Zimmerman, Chairman of the Gypsum Association Safety Committee, called the meeting to order at the Marriott Motor Hotel, Saddle Brook, New Jersey, at 8:30 a.m. Those in attendance were:

C. J. Saturnia	Celotex Corporation
M. F. Fink	Georgia-Pacific Corporation Gypsum Division
J. Gregg	Kaiser Gypsum Company, Inc.
R. W. Henly	The Flintkote Company
J. Tuffy	The Flintkote Company
T. D. Tolin	National Gypsum Company
F. H. Zimmerman	National Gypsum Company
P. Kipp	United States Gypsum Company
A. V. Abnee, Jr.	Gypsum Association
F. J. Rogers	Gypsum Association

1. GYPSUM ASSOCIATION SAFETY BULLETIN

A. The chairman requested that the secretary relate the member company response for safety articles to be used in the Bulletin. Following a brief discussion by the committee, it was their recommendation that each member company stimulate employee participation by urging the plant employees to write and submit safety articles to the Association.

B. The committee reviewed the Bulletin format and it was the consensus that it was satisfactory in its present form. One member suggested that a possible change be considered when the next Bulletin mast head is printed. The secretary indicated that present Bulletin stock supply would be depleted at the end of the fiscal year, and at that time, committee suggestions would be solicited.

The committee requested that the secretary construct a chart showing the industry frequency rating over the past four years, as related to the all industry frequency rating reported by the National Safety Council, and print this chart in the Safety Bulletin. The secretary indicated that such a chart was already being considered for the October issue.

The committee directed that this item be carried on the docket.

PLAINTIFF'S EXHIBIT NG-3005

9/19/67

PLAI EX 155

2. "CERTIFICATE OF MERIT" AWARD

The secretary submitted a "Certificate of Merit" award plaque for committee investigation. He informed the committee that the award cost the Association $20.00 to purchase and mail, and requested that they might consider adopting an award that might have greater utility for the winner, such as an ash tray or pen set. The committee, after much discussion, directed the secretary to obtain a costly certificate and also purchase an ash tray for the award winners.

Following a thorough review of the last three editions of the Safety Bulletin, the committee selected one article by ballot. The article "Did You Bet Your Life?" by Val Robertson, Assistant Production Superintendent, The Flintkote Company, Blue Diamond Gypsum Division, Fresno, California (August 1967) won the award. Mr. Robertson will receive a certificate and inscribed ash tray for his contribution to safety.

3. AIR AND STREAM POLLUTION

The chairman cited a few pollution problems involving plants on a local level. He stressed the importance of all committee members keeping abreast with local, state, and federal pollution programs.

One member noted a recent problem involving the asbestos industry where a number of lung carcinoma cases had been reported by inhabitants of the neighborhood surrounding an asbestos plant. It was further noted that clinical tests and investigations had resulted in legal action against the manufacturer by the claimants.

The chairman indicated that air and water pollution problems would have a dramatic effect on all industries and that the committee should take the initiative to meet any such problems head on if they should occur in the gypsum industry.

Following a discussion of pollution problems in various industries, it was the consensus that the safety committee should have more active program in this area, outlining the problems that exist and what steps have been taken to solve them.

On a motion seconded and carried, the committee recommend that the chairman advise the directors of the pollution problem, an suggest that they have plant managers join local groups studying po tion problems, so as to give our industry greater control of the pr

The committee directed that this subject be carried on t docket.