

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION
IN THE UNITED STATES DISTRICT COURT

Mrs. Horace G. Waters,	)	Civil Action No. 79-111 A
Ethel Bowman Pendley,	)	Civil Action No. C77-632 A
Executrix	)	
	)	
Plaintiffs	)	WP. Int. #1-3-11-8-
	)	
vs.	)	
	)	
Combustion Engineering,	)	
Inc., et al.	)	
	)	
Defendants	)	

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF GEORGIA
SAVANNAH DIVISION

IN RE:	)	Civil Action Nos. CV479-267
	)	
	)	CV479-268 CV479-275
	)	CV479-271 CV479-313
	)	CV479-274 CV479-270
	)	CV479-312 CV479-273
	)	CV479-269 CV479-287
	)	CV479-272 CV479-132

ANSWERS OF DEFENDANT
JOHNS-MANVILLE SALES CORPORATION,
TO PLAINTIFF'S INTERROGATORIES

TO ALL ATTORNEYS OF RECORD:



In accordance with the provisions of the Federal Rules of Civil Procedure, Johns-Manville Sales Corporation hereby answers the Interrogatories of Plaintiffs served on Defendant's counsel.

Defendant reserves the right to amend or supplement its answers if it finds that inadvertent omissions or errors have been made or if additional or more accurate information becomes available that is required to be provided by the Federal Rules of Civil Procedure.

1. State the name, present business address, present residence, and capacity or title of the individual signing these interrogatories on behalf of the Defendant.

ANSWER: This document is signed by R. B. Von Wald, Assistant General Counsel of Johns-Manville Corporation and Vice President of Johns-Manville Sales Corporation, Ken-Caryl Ranch, Denver, Colorado, (303) 979-1000, solely to satisfy the rules of procedure, as no single

officer or agent of Defendant has the exclusive knowledge or information required to supply the necessary answers. Answers were prepared from a number of sources; i.e., files and records of Defendant's various divisions and departments and interviews with various employees. The above signing officer has been informed that those files, documents and interviews support the responses herein based upon a diligent search of available information conducted as of the date of signature.

2. Please state whether or not you have ever held a certificate of authority to do business in the State of Georgia and the date thereof and the address of your principal place of business and whether you have assumed the assets and/or liabilities of any predecessor corporation or entity (such predecessor corporations being limited to any association whatsoever with the asbestos aspect of the defendant's business). Answer these interrogatories for each such acquired company which manufactured insulation products containing asbestos.

ANSWER: Yes; January 1, 1930 to the present; the principal place of business of Johns-Manville Sales Corporation is Ken-Caryl Ranch, Denver, Colorado; effective December 31, 1975, Johns-Manville Products Corporation was merged into Johns-Manville Sales Corporation, the same being the surviving corporation.

3. Has defendant, at any time, engaged in the manufacture of insulation products containing asbestos fibers?

ANSWER: Yes.

4. Has defendant, at any time, engaged in the mining and/or milling of material containing asbestos fibers?

ANSWER: Yes. Johns-Manville Sales Corporation owned 80% of the Coalinga Mine in Coalinga, CA which was in operation from March, 1962 until June, 1974.

5. Has defendant, at any time, engaged in the processing, marketing and sale of products containing asbestos fibers?

ANSWER: Yes.

6. If the answer to one or more of the last three questions is affirmative, please state as to each affirmative answer the following:

(a) The trade or brand name of each such product mined, manufactured, and/or marketed;

(b) The dates each of such products were placed on the market;

(c) The dates each of such products were withdrawn from the market;

(d) A description of the physical (the chemical) composition of each such product including the type of asbestos contained in each such product (i.e., amosite, chrysotile or crocidolite) and the quantitative percentage of asbestos in each product;

(e) A description of the physical appearance of each such product;

(f) A detailed description of the intended uses of each such product;

(g) The name of the manufacturer of each such product;

(h) The mining or milling concern from which the raw asbestos fiber was obtained.

ANSWER: (a) See Exhibit A attached hereto for industrial thermal insulation products containing asbestos manufactured and/or marketed by Johns-Manville Products Corporation and/or Johns-Manville Sales Corporation. Trade names are in capital letters.

(b) See Exhibit A attached hereto.

(c) See Exhibit A attached hereto.

(d) See Exhibit B attached hereto for the type of asbestos contained in each product and Exhibit C attached hereto for the percent of asbestos fiber contained in said products. Generally these products contained magnesia, lime, silica, clay and asbestos fiber. Defendant objects to providing the precise chemical composition of each product on the grounds that the same constitutes a trade secret.

(e) See Exhibit A attached hereto.

(f) The intended use for each product was for general insulation applications for protection against heat, cold and noise. Specific uses are and have been within the sole discretion of purchasers.

(g) Johns-Manville Products Corporation manufactured all of the products listed on Exhibit A until its merger into Johns-Manville Sales Corporation effective December 31, 1975. Johns-Manville Sales Corporation continues to manufacture accessory items containing "locked-in" fiber.

(h) Most raw asbestos fiber utilized by Johns-Manville Products Corporation or Johns-Manville Sales Corporation was mined at the Jeffrey Mine of Johns-Manville Canada Inc. (formerly Canadian Johns-Manville Company, Ltd.) in Asbestos, P. Q., Canada.

7. Does defendant claim that any patent would cover any product listed above in Interrogatory number 6?

ANSWER: Yes.

8. If so, for each such product, please state:

- (a) The number of each patent;
- (b) The date same was issued;
- (c) The number of each patent application that is pending.

ANSWER: Insofar as can be ascertained from existing identifiable records of the Patent Department of Johns-Manville, the list of United States Patents below identifies those patents which Johns-Manville believes are or may be of relevance to certain of the Johns-Manville asbestos-containing products designated in the Interrogatory. Because these records do not permit the unequivocal identification of specific patents with individual grades or versions of different types of products, the patents are listed by product groups rather than by individual products.

<u>Product Group</u>	<u>Patent No.</u>	<u>Issue Date</u>
MARINITE products	2,326,516	1943
MARINITE products	2,326,517	1943
MARINITE products	2,873,480	1959
MARINITE products	3,778,954	1973
MARINITE products	3,882,598	1975
MIN-K products	2,808,338	1957
MIN-K products	2,811,457	1957
MIN-K products	3,055,831	1962
MIN-K products	3,152,034	1964
MIN-K products	3,176,354	1965
MIN-K products	3,285,808	1966
MIN-K products	3,366,001	1968
MIN-K products	3,950,259	1976
ASBESTOCEL	3,232,865	1966
METAL-ON products	3,058,860	1962
METAL-ON products	3,193,894	1965
METAL-ON products	3,222,777	1965
METAL-ON products	3,269,164	1966
THERMO-MAT products	3,240,658	1966
MICROBESTOS products	3,365,358	1968
THERMOBESTOS products	2,699,097	1955
THERMOBESTOS products	3,352,746	1967
THERMOBESTOS products	3,449,141	1969
THERMOBESTOS products	3,661,607	1972

SUPEREX products	3,394,913	1968
Asbestos felt and paper products	3,037,895	1962
Asbestos felt and paper products	3,212,960	1965
Asbestos felt and paper products	3,269,889	1966
Asbestos felt and paper products	3,383,230	1968
Asbestos felt and paper products	3,519,475	1970
Asbestos felt and paper products	3,729,917	1973
Asbestos millboard products	3,954,556	1976

Because of established record retention policies, both of Johns-Manville Corporation and the Patent Department thereof, records do not exist or are not presently identifiable which would permit any other Johns-Manville patents to be unequivocally related to any of the designated products.

Similarly, for those products designated in this Interrogatory which do not fall within the product groups set forth above, records do not exist or are not presently identifiable which would permit Johns-Manville to determine unequivocally whether any of these products would ever have been covered by patents. In this regard it is noted that many of the designated products commenced service many years ago. The pertinent United States patent laws have long required that a patent on a product be applied for not later than one (or previously two) years after the product becomes commercial. Therefore, any patents which might have been obtained on such older products would have been obtained years ago, would long since have expired, and can no longer be identified unequivocally from present records.

The existing identifiable records indicate that there are not at present any pending United States patent applications which are or may be of relevance to any of the designated asbestos-containing products.

It is also noted that all United States Patents and the file histories thereof are available to the public at the United States Patent and Trademark Office in Arlington, Virginia, and it is no greater burden on Plaintiffs than on Defendant to inspect such records pertaining to expired United States patents for which Defendant's own records no longer exist.

9. Have any of the products listed in Interrogatory 6 above been altered in chemical composition or asbestos type or content since first being marketed?

ANSWER: Yes.

10. If so, please state:

- (a) The trade name of each such product;
- (b) The date each such product was altered;
- (c) The nature of the alteration;
- (d) The reason for the alteration.

ANSWER: Johns-Manville Products Corporation Defendant ceased the manufacture of asbestos-containing industrial thermal insulation products in 1972-73, with the exception of certain accessory items containing "locked-in" asbestos. Some of the products were replaced by newer non-asbestos bearing industrial thermal insulation products in an effort to keep abreast of competition in light of medical and technological developments and governmental standards. See Exhibit D attached hereto for a list of replacement products.

11. Do any written memoranda, specifications, blueprints or other written materials of any kind or character exist relating to the testing of said products?

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad and vague. The question does not specify the type or nature of testing.

12. If so, please state:

- (a) List each such written material or document;
- (b) Who presently has possession of each such document, and where is it located.

ANSWER: Not applicable.

13. Did defendant make any design changes as a result of such tests?

ANSWER: Not applicable.

14. If so, please state:

- (a) The nature of the change made.
- (b) The name, address, and job classification of each person in charge of making a change.

ANSWER: Not applicable.

15. Do any written memoranda, specifications, recommendations or other written materials of any kind or character relating to the

testing of the said products exist?

ANSWER: Same question as Interrogatory No. 11. Defendant objects to this Interrogatory on the grounds that the same is overly broad and vague. The question does not specify the type or nature of testing.

16. If so, please state:

- (a) List each such written material or document;
- (b) Who presently has possession of each such document.

ANSWER: Same question as Interrogatory No. 12.

17. Did you make any design changes as a result of such tests?

ANSWER: Same question as Interrogatory No. 13. Not applicable.

18. If so, please state:

- (a) The nature of the change made;
- (b) The name, address, and job classification of each person responsible for making such a change.

ANSWER: Same question as Interrogatory No. 14. Not applicable.

19. Has defendant, at any time, published and/or distributed any brochures, sales literature, pamphlets or other written materials (aside from any caution labels on containers) of any kind or character that contain any warnings, cautions, caveats or directions concerning the possibility of injury resulting from the use of the products listed in interrogatory 6 above?

ANSWER: Yes.

20. If so, please state:

- (a) The wording of each such warning;
- (b) A description of each such printed material;
- (c) The method used to distribute the warning to persons who are likely to use the products;
- (d) The date each such warning was issued;
- (e) The name, address, and job classification of each person who presently has possession of the above described documents;
- (f) If you will without a motion, please attach a copy of each such warning;
- (g) State whether any industrial psychologists or human factors engineers were consulted prior to utilizing such warnings, cautions, etc.

ANSWER: Defendant states that it does not understand what Plaintiffs mean by "injury resulting from the use of the products".

Once the products have been installed, they are essentially immobile and not "used" by workers. They merely become an integral part of a functioning system. If, however, Plaintiffs' question has reference to the handling and/or application and/or installation of Defendant's products by insulation workers so that such products may serve their end use, then Defendant answers as follows:

Defendant has on a continuing basis, furnished customers information as to the proper use and application of its insulating products. Answering Defendant has directly or indirectly advised industrial insulation contractors to utilize ventilation equipment, such as respirators, at the sites where finished insulation products were being worked with and applied. Those respirators which have been recommended are approved by NIOSH (formerly the responsibility of the United States Bureau of Mines) for use as protection against pneumoconiosis-producing dusts.

Defendant has also affixed caution instructions to products regarding the handling of these products as set forth in Defendant's Answer to Interrogatory No. 22.

Defendant also distributed to customers copies of the following booklet providing instructions designed to reduce health and safety risks in the fabrication, handling and application of asbestos products:

"Recommended Health Safety Practices for Handling and Applying Thermal Insulation Products Containing Asbestos" (1968), a copy of which is available for copying at the office of Defendant's counsel.

Defendant has participated in, and contributed to, the informational and educational program of the National Insulation Manufacturers Association. This program is designed to educate the insulation contractors' industry with respect to the health aspects of fibrous materials through regional meetings of insulation contractors' associations. The purpose of these meetings is to aid the contractors in minimizing or eliminating the inhalation of, among other things, asbestos fibers by those working with and/or installing and/or applying the products of Defendant and other manufacturers, i.e., industrial insulation applicators. In 1967, and again in 1968, programs have been presented at the regional meetings of industrial insulation contractors. Approximately 400 industrial insulation contractors have attended each year. These programs include a verbal review (of ap-

proximately three hours' duration) of the biological effects of fibrous materials, the threshold limit value of fibrous materials, methods for evaluating concentrations of dust, and engineering and method change recommendations to assist the contractors in dust abatement and environmental control. In addition to the verbal presentations, booklets have been prepared by the National Insulation Manufacturers Association (NIMA), largely through Defendant's participation and efforts. The booklet entitled "Recommended Safe Practices for Handling and Applying Thermal Insulation Products Containing Asbestos", printed May 1, 1968, described above, was written by members of the NIMA Education and Information Committee. The Chairman of the Committee was Clifford L. Sheckler, who at that time, was also Manager, Accident Prevention and Health Administration of Johns-Manville Corporation. Other members of the Committee included John Vyverberg, Owens-Corning Fiber Glass Corporation; Harry Mesler, Ruberoid Company; Leon Horowitz, Certain-teed Corporation; and Jack Barnhart, Executive Secretary of the National Insulation Manufacturers Association. The aforesaid booklet was produced and circulated during the 1968 meetings. Also, subsequent to the meetings with the contractors, considerable work has been done in conjunction with environmental control, especially in the area of fixed machinery and equipment.

In addition, over the past several years, there have been many oral presentations and meetings at the plant level concerning safety practices related to asbestos exposure.

Also, Defendant has cooperated with the Asbestos Information Association in the production of the following booklets:

"Recommended Work Practices - Molding and Fabrication of Asbestos-Containing Plastic Products".

"Recommended Work Practices - Fabrication and Use of Asbestos Friction Materials".

"Recommended Work Practices - Fabrication and Use of Asbestos Paper Products".

"Recommended Work Practices - Shop and Field Fabrication of Asbestos Sheet Products".

"Recommended Work Practices - Use and Handling of Asbestos Textile Products".

Such booklets may be obtained from the AIA, 1600 L Street, N.W. Washington, D. C. 20036.

Additionally, Defendants participated in 1971 through the

Occupational Health and Safety Committee of the National Insulation Contractors Association in the preparation of a booklet entitled, "Safety Reminders". Such booklet is available from NICA, 8630 Fenton Street, Silver Spring, Maryland 20910, at a cost of 60 cents per copy.

21. From 1930 until the present, did the asbestos products manufactured or distributed by you, contain any warning, caution, caveat or other statement on the product or its packaging?

ANSWER: Yes.

22. If so, please state:

- (a) When did the warning first appear;
- (b) What was the precise wording of the warning, when it first appeared;
- (c) Was the warning altered, amended or changed in any manner? If so, how and when;
- (d) Where was the warning located on the product or packaging;
- (e) When did you become aware that warnings were placed on products distributed by other defendants. State the reason warnings of the other defendants were not placed on your products.
- (f) State the manner in which your product is shipped and the type of container it is shipped in to retailers;
- (g) State whether any industrial psychologists or human factors engineers were consulted prior to utilizing such warnings, cautions, etc.

ANSWER: Defendant placed warning notices on the packaging of its industrial thermal insulation products which contained asbestos which might release dust upon installation. The warning labels and the dates of use are as follows:

CAUTION

THIS PRODUCT CONTAINS ASBESTOS FIBER.

INHALATION OF ASBESTOS IN EXCESSIVE
QUANTITIES OVER LONG PERIODS OF TIME
MAY BE HARMFUL.

IF DUST IS CREATED WHEN THIS PRODUCT
IS HANDLED, AVOID BREATHING THE DUST.

IF ADEQUATE VENTILATION CONTROL IS NOT
POSSIBLE, WEAR RESPIRATORS APPROVED BY
THE U. S. BUREAU OF MINES FOR PNEUMOCONIOSIS-
PRODUCING DUSTS.

(1964-1970)

CAUTION

THIS PRODUCT CONTAINS ASBESTOS FIBER.
AVOID BREATHING THE DUST. INHALATION
OF ASBESTOS IN EXCESSIVE QUANTITIES
OVER LONG PERIODS OF TIME MAY BE HARMFUL.

IF DUST IS CREATED WHEN THIS PRODUCT
IS HANDLED, USE PROPER PROTECTION.

IF PROPER DUST CONTROL CANNOT BE PROVIDED,
RESPIRATORS APPROVED BY THE U. S. BUREAU OF
MINES FOR PROTECTION AGAINST PNEUMOCONIOSIS-
PRODUCING DUSTS SHOULD BE WORN.

(1970-1972)

CAUTION

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

(1972-1978)

CAUTION

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

SMOKING GREATLY INCREASES THE
RISK OF SERIOUS BODILY HARM
(1978-PRESENT)

These warnings or some modification thereof were used on the packaging of all industrial thermal insulation products of Defendant which contained asbestos which might release dust upon application. Use of warning labels was commenced during 1964. Defendant used such warning notices because in 1964, it was reported by a member of the medical profession that there might exist a risk to some persons who installed industrial insulation products containing asbestos, in that inhalation of excessive quantities of asbestos fibers over prolonged periods of time under certain conditions might create a risk of the contracting of asbestosis to some persons. The label in use from 1972 to 1978 was prescribed by the United States Department of Labor, Occupational Safety and Health Administration (OSHA) pursuant to 29 C.F.R. Sec. 1910.1001, such regulation being promulgated by OSHA in 1972.

This label was revised by Defendant to include a no-smoking warning, implementation of which commenced in November, 1978.

In addition, sales and service personnel, whose identity is presently unknown to Defendant, may have in the ordinary course of business communicated information to those using products manufactured by Johns-Manville Products Corporation or employees installing such products as to the then current threshold limit values.

23. Have you received notice that any other person was claiming injury as a result of using asbestos products manufactured and/or sold by your company (both prior to and subsequent to the filing of this action)?

ANSWER: Yes.

24. If so, please state:

- (a) The name and address of each claimant;
- (b) The date of notice of each claim;
- (c) A description of the claim, i.e., workmen's compensation, products liability, etc.;
- (d) The type of injuries allegedly sustained;
- (e) The name and address of each attorney who represents individuals making such claims;
- (f) The style and court number of each claim currently pending;
- (g) The resolution of each claim that has been settled or taken to judgment.

ANSWER: A list of litigation with regard to asbestos or asbestos-containing thermal insulation products is attached hereto as Exhibit E. Included in that list is the caption of each case identifying the court in which the case is pending and the case number. Defendant objects to furnishing additional information as the same is a matter of public record contained in the court file of each respective case and readily available to Plaintiffs.

25. Do you have any records indicating that any of your products containing asbestos fibers were sold to any of the companies named as co-defendants in this suit?

ANSWER: Defendant is unable to answer this Interrogatory without Plaintiffs first furnishing applicable names and addresses for such companies. Absent such a reference to a location, Plaintiffs are requesting information for any sales to the co-defendants anywhere in the United States, which places an unconscionable burden on this Defendant. In addition, Plaintiffs' furnishing of addresses will facil-

itate access to the applicable records.

26. If so, please state:

(a) The name, address and job classification of each individual who currently has possession of such records;

(b) Please list the names of each co-defendant to whom your products have been sold;

(c) Please state the dates of each such sale and the amount and kind of materials sold;

(d) State whether your company manufactured asbestos containing insulation products for a co-defendant but placed said co-defendants' labels, logos or containers on said products and list each such co-defendant.

ANSWER: Not applicable.

27. Does defendant contend that plaintiff improperly used your products?

ANSWER: Unknown at the present time.

28. If so, please set out in detail in what respect said products were improperly used.

ANSWER: Not applicable.

29. Does defendant have policies of insurance that might cover the claims that have been made by plaintiff herein?

ANSWER: Yes.

30. If so, please list the name of each insurance carrier who may have coverage, the amount of such coverage, and the dates of each such policy.

ANSWER:

INSURANCE

Primary Coverage:

The Travelers Insurance Company
Hartford, CT

Combined Bodily Injury & Property Damage Limit
\$2 million per occurrence
\$2 million aggregate
(7/1/75 - 7/1/76)

Bodily Injury Limits:
\$1 million per occurrence
\$1 million per aggregate
(7/1/74 - 7/1/75)

\$200,000 per occurrence
\$500,000 aggregate
(7/1/53 - 7/1/74)

\$150,000 per occurrence
\$500,000 aggregate
(7/1/47 - 7/1/53)

It is believed that JM also has the following primary insurance:
Commercial Union Assurance Companies - Boston, MA
(previously: The Employers' Liability Assurance Corporation,
Limited)

\$150,000 per person
\$250,000 per occurrence
(7/1/34 - 7/1/48)

Umbrella (or excess) policies:

JM has excess insurance totalling approximately \$350 million in the aggregate covering the years from 1951 to 7/1/76. The annual aggregates vary from a low of \$2 million to a high of \$35 million.

JM has umbrella (excess) insurance with annual aggregates of at least \$50 million starting 7/1/76 to the present.

31. Does Defendant contend that insulation products containing asbestos can be manufactured or treated so as to eliminate all potential health hazards to workers installing same?

ANSWER: Defendant objects to the improper form of this question. No product can be manufactured or treated so as to eliminate "all potential health hazards".

32. If so, please explain.

ANSWER: Not applicable.

33. Please describe in detail the type of packages in which Defendant has sold asbestos material, listing the dates each type of package was used, a physical description thereof, and a description of any printed material or trademarks that appeared thereon.

ANSWER: Such products were sold in boxes and/or cartons and/or packages and/or skids and/or bales, and/or multi-walled Kraft paper bags. Also, see Exhibit A for dates products were manufactured and trademarks that appeared thereon and Answer to Interrogatory No. 22 for information regarding warning labels.

34. Did you receive any reports or communications from your workmen's compensation insurance carrier or products liability insurance carrier with regard to the hazards incident to use of asbestos containing insulation products? If so, please state who had possession of said reports, the location of said reports and the substance of the contents of said reports, listing for each such report the respective insurance company, its address, and the agent signing such correspondence.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence.

35. If the answer to Interrogatory Four (mining and milling) is yes, state:

- (a) Where the asbestos was mined and milled;
- (b) How long you have mined and milled asbestos;
- (c) Whether the defendant has supplied this mined and/or milled asbestos to any of the other defendants since 1950; when these transactions took place; and the dollar and tonnage amount of such sales;
- (d) Whether any warnings, cautions, caveats or directions accompanied the materials referred to in (c) and the date these first appeared.

ANSWER: (a) - (b) See Answer to Interrogatory No. 4.

(c) - (d) Defendant objects to these portions of the Interrogatory on the grounds that the information called for relates only to raw asbestos fiber, and, accordingly, has no relationship to finished asbestos-bearing industrial thermal insulation products to which Plaintiffs allege exposure.

36. If the answer to Interrogatory Four is no, state:

- (a) From what source or sources, if any, did your company obtain mined asbestos since 1950;
- (b) Whether any warnings, cautions, caveats, or directions accompany the material referred to in (a) and the nature and extent of said warnings, cautions, caveats or directions accompanying said asbestos;
- (c) Approximately what date said warnings, cautions, caveats or directions first appeared on the mined asbestos.

ANSWER: Not applicable.

37. If the answer to Interrogatory Three is yes, state:

- (a) Where the asbestos or asbestos materials were manufactured;
- (b) How long the defendant has manufactured asbestos or asbestos materials;
- (c) Whether the defendant has supplied this manufactured asbestos or asbestos materials to any of the other defendants since 1945, when these transactions took place, where, and the compensation paid for the manufactured asbestos or asbestos materials;
- (d) Whether any warnings, cautions, caveats or directions accompanied the materials referred to in (c) and the date these first

appeared.

ANSWER: (a) Defendant's major manufacturing locations for the products listed on Exhibit A were Long Beach, California; Waukegan, Illinois; and Manville, New Jersey.

(b) See Exhibit A.

(c) See Answer to Interrogatory No. 25.

(d) Yes. See Answer to Interrogatory No. 22.

38. If the answer to Interrogatory Three is no, state:

(a) From what source or sources, if any, did your company obtain asbestos containing insulation products since 1945;

(b) Whether any warnings, cautions, caveats, or directions accompany the material referred to in (a) and the nature and extent of said warnings, cautions, caveats or directions accompanying said asbestos or asbestos materials;

(c) Approximately what date said warnings, cautions, caveats or directions first appeared on the manufactured asbestos or asbestos materials.

ANSWER: Not applicable.

39. Has the defendant imported asbestos or asbestos materials since 1930?

ANSWER: See Answers to Interrogatories Nos. 4 and 6(h).

40. If the answer to the preceding interrogatory is in the affirmative, state:

(a) From where the asbestos or asbestos materials was imported;

(b) How long the defendant has imported asbestos or asbestos materials;

(c) Whether the defendant has supplied this imported asbestos or asbestos materials to any of the other defendants since 1945, when these transactions took place and where.

(d) Whether any warnings, cautions, caveats or directives accompanied the materials referred to in (c) and the date these first appeared.

ANSWER: Defendant objects to providing the information requested regarding raw fiber. Plaintiffs allege exposure to finished asbestos-containing insulation products and not to raw fiber. For information regarding such products, see Answer to Interrogatory No. 37.

41. Has the defendant sold or distributed asbestos containing

insulation materials at any time since 1930?

ANSWER: Yes.

42. If the answer to the preceding interrogatory is in the affirmative, state:

(a) Where the defendant has sold or distributed such products since 1930;

(b) How long the defendant has sold or distributed such products;

(c) Whether the defendant has sold or distributed such products to any of the other defendants named in this litigation since 1945 and state the dollar and tonnage amounts of such sales and the dates of same.

ANSWER: (a) Nationwide, mainly through its distributors.

(b) See Exhibit A attached hereto.

(c) See Answer to Interrogatory No. 25.

43. If the answer to subpart (c) of Interrogatory 42 is in the affirmative, state:

(a) Whether any warnings, cautions, caveats, or directive accompany the asbestos or asbestos materials sold or distributed to these other defendants, the content of said warnings, cautions, caveats, or directives accompanying said asbestos;

(b) Approximately what date said warnings, cautions, caveats or directives first appeared on asbestos materials distributed to the other defendants.

ANSWER: Not applicable. However, see Answer to Interrogatory No. 22 for information on warning labels.

44. If the defendant has discontinued manufacturing and/or selling asbestos products, please state the reason or reasons therefor.

ANSWER: In an effort to improve and update its industrial thermal insulation products and keep abreast of competition in the industrial thermal insulation field in light of medical and technological developments and governmental standards and the difficulties of dust control in field applications.

45. Have any of the other defendants named in the litigation ever furnished the defendant answering these Interrogatories with information as to the state of the medical knowledge regarding the connection between asbestos exposure and the contracting of pulmonary

diseases including cancer and asbestosis?

ANSWER: Not to the best of Defendant's present knowledge.

46. If the answer to the preceding interrogatory is in the affirmative, state:

- (a) What information was the Defendant furnished with;
- (b) When the defendant was furnished the information;
- (c) By whom was the defendant furnished the information.

ANSWER: Not applicable.

47. Have the defendants interchanged results of research, tests, medical studies or experiments regarding the state of the medical knowledge regarding the connection between asbestos exposure and the contracting of pulmonary diseases including lung cancer and asbestosis since 1930?

ANSWER: Defendant objects to the form of the question in that response thereto presumes medical knowledge of a connection between asbestos exposure and the contracting of pulmonary disease, including lung cancer and asbestosis, since 1930, which in fact did not exist.

48. If the answer to the preceding Interrogatory is in the affirmative, state:

- (a) When these interchanges took place;
- (b) Who participated in these interchanges;
- (c) Summarize the content of these interchanges of studies.

ANSWER: Not applicable.

49. Has the defendant become aware as the result of other litigation or by any other means of any studies, research, experiments or tests conducted by another defendant which, if known at the time said study, research, experiment or tests were made would have altered the manner or way the defendant answering these Interrogatories acted in distributing these products?

ANSWER: Defendant objects to the form of the question and objects on the grounds that the same calls for improper conclusion based on hindsight, which has no basis in this lawsuit in either law or fact.

50. If the answer to the preceding interrogatory is in the affirmative, state:

- (a) When these studies, research, experiments or tests were made;
- (b) By whom were these studies, research, experiments or

tests made;

(c) Summarize the contents of these studies and how you would have acted differently.

ANSWER: Not applicable.

51. Please state if the defendant or anybody on behalf of the defendant ever conducted or sponsored or contributed financially to any studies or research to determine if the inhalation of asbestos fibers may be harmful. If so, please state:

- (a) By whom the research was conducted, giving complete names and addresses;
- (b) The dates that each such test was conducted;
- (c) The complete results of each test or study;
- (d) Supply copies of all reports of the research department pertaining to the use by the corporation of asbestos in their manufactured insulation products.

ANSWER:

a-c. Preliminarily, the significant difference between "asbestos workers", usually meaning workers in asbestos factories where 100% asbestos fiber is processed, and the "insulation workers", or "insulators", who work with products containing 15% or less asbestos fiber, must be clearly understood. Those studies involving "insulators" are as follows:

In 1968, Johns-Manville joined in the establishment of the Insulation Industry Hygiene Research Program of Mt. Sinai Hospital.

The purposes of this study are:

- (1) To develop improved methods for minimizing inhalation by insulation workers of dust and fumes encountered in their work;
- (2) To disseminate knowledge of those improved methods of dust and fume control wherever they may be applied advantageously; and
- (3) To offer cooperation, advice and assistance toward universal adoption of these methods.

The Program Director is Irving J. Selikoff, M.D., Director of the Environmental Sciences Laboratory, Mt. Sinai School of Medicine, New York, New York. These studies have not been concluded. Reports have been published from time to time and circulated to the trade through the union and are presumably available to Plaintiff's

attorney through the Director of the Program, Dr. Irving J. Selikoff. In 1969-1970 at Defendant's Research and Engineering Center at Manville, New Jersey, tests were conducted for the Insulation Industry Hygiene Research Program by Thomas J. Weeks and Allen F. Burns. A copy of the report on such tests entitled "Performance of Dust Respirators against a Fibrous Dust" by Messrs. Weeks and Burns, published in American Industrial Hygiene Association Journal (May-June, 1970), is available for copying at the office of Defendant's counsel.

Additionally, an epidemiological study of the biological effects of asbestos dust among the Port of Genoa and LaSpezia Arsenal insulation workers, among others, is being conducted by the Clinica del Lavoro, Milano, Italy, under the sponsorship of the Institute of Occupational and Environmental Health, which Institute in turn is funded by the Quebec Asbestos Mining Association. Defendant is the principal contributor to the funding of the Quebec Asbestos Mining Association. This study was initiated early in 1968. This study has generated the following:

"Research Project: Epidemiological Study on the Biological Effects of Asbestos Dust at the Balangero Mine and among the Port of Genoa and LaSpezia Arsenal Insulation Workers" by Enrico C. Vigliani (June 16, 1972), Report Clinica del Lavoro "Luigi Devoto", a copy of which is available for inspection and copying at the office of Defendant's counsel.

Defendant, through its membership in the National Insulation Manufacturers Association, has funded, in part, the studies conducted by Dr. Clark Cooper, et al, at the University of California at Berkeley. The following have been generated by this study:

"Industrial Hygiene for Insulation Workers", by J. Leroy Balzer, published in the Journal of Occupational Medicine (January, 1968), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Environmental Exposures in the Insulation Trade" by J. Leroy Balzer, published in NICA Outlook (April, 1970), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Evaluation and Control of Asbestos Exposures in the Insulating Trade", by Clark W. Cooper and J. Leroy Balzer, 2nd International Conference Biological Effects of Asbestos, Dresden, (1968), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Asbestos In Relation to the Type of Fibre and Dose in the Insulation Industry", by W. Clark Cooper and J. Miedema, LYON Conference (October, 1972), a copy of which is available for inspection and copying in the office of Defendant's counsel.

The first of the studies under the direction of Dr. Cooper, mentioned above, was published in the Journal of Occupational Medicine (January, 1968) and reported to numerous persons and entities

including the Eleventh Annual Western Industrial Health Conference. The second study directed by Dr. Cooper, referred to above, was published in the National Insulation Contractors Association's magazine Outlook during or about 1970.

Defendant has directly and/or indirectly sponsored, or participated in numerous studies including a group commencing in 1928 on mining and manufacturing workers who were dealing with raw asbestos. Initially, Defendant and/or Johns-Manville Corporation contributed funds to sponsor animal research on the effects of asbestosis at the Saranac Laboratory of the Trudeau Foundation in up-state New York commencing in 1928. The funds were contributed by Defendant and/or Johns-Manville Corporation in the form of premium payments and assessments to the Metropolitan Life Insurance Company, which was the immediate sponsor. The amount of such contributions is not known to, nor determinable by Defendant.

In early 1931, a report of this animal experiment was published by Dr. Leroy V. Gardner (the original director of this project) in Vol. 13 No. 3 (March 31, issue) of the Journal of Industrial Hygiene. This report is entitled "Studies on Experimental Pneumonokoniosis. VI. Inhalation of Asbestos Dust: Its Effect Upon Primary Tuberculous Infection". A copy of such report is available for inspection and copying in the office of Defendant's counsel.

In 1929, shortly after the launching of the Saranac studies, Defendant and/or Johns-Manville Corporation and other companies in the asbestos industry asked the Metropolitan Life Insurance Company to determine whether asbestos dust was an occupational hazard and, if so, the nature of the hazard and what could be done to control it. The amounts of Defendant's and/or Johns-Manville Corporation's contributions in the form of increased premiums and assessments is not known to, nor determinable by Defendant. The Industrial Hygiene Division of the Department of Public Health of the McGill University Medical School in Montreal assisted Metropolitan Life in this research. The results were published in 1935 in the Public Health Reports, Vol. 50, No. 1, issued by the U. S. Public Health Service in an article entitled "Effects of the Inhalation of Asbestos Dust on the Lungs of Asbestos Workers" by A. J. Lanza, et al. The cost of publication was paid for by general tax funds. A copy of this report is available for inspection and copying in the office of Defendant's counsel.

As a result of the aforesaid Metropolitan Life study, additional health research on the effects of prolonged and excessive inhalation of asbestos fiber on human beings was undertaken at the Saranac Laboratory. The Quebec Asbestos Mining Association ("QAMA"), of which Johns-Manville Corporation was and is a principal member, contributed to this new research. A report on this research was delivered at the Seventh Saranac Lakes Symposium in 1952, and was entitled "Pulmonary Function Studies in Men Exposed for Ten or More Years to Inhalation of Asbestos Fibers" by Fernand Gregoire and George W. Wright. A copy of such report is available for inspection and copying in the office of Defendant's counsel.

Another report arising out of the industry-sponsored studies at Saranac Laboratory was entitled "Experimental Studies of Asbestosis". It was written by Arthur J. Vorwald, Thomas M. Durkin and Philip C. Pratt, and appeared in the A.M.A. Archives of Industrial Hygiene and Occupational Medicine in January, 1951, at Vol. 3, Page 1. A copy of this paper is available for inspection and copying in the office of Defendant's counsel.

In the early 1950's, an animal research project to investigate the reported association between asbestos exposure and lung cancer was begun at Saranac Lake and funded by QAMA. A report entitled "Asbestosis and Pulmonary Cancer" by Arthur J. Vorwald was released in 1952. A copy thereof is available for inspection and copying at the office of Defendant's counsel.

Another project was an epidemiological study of lung cancer among asbestos miners in the Province of Quebec in Canada. This study was also sponsored by QAMA, and, again Johns-Manville Corporation furnished a significant portion of the funding. The study was conducted by Daniel C. Braun and T. David Truan for the Industrial Hygiene Foundation of America, Pittsburgh, Pennsylvania. The study was completed in 1957 and published in the June 1958, Vol. 17 issue of the A.M.A. Archives of Industrial Health at Page 634 and was entitled "An Epidemiological Study of Lung Cancer in Asbestos Miners". A copy of this study is available for inspection and copying at the office of Defendant's counsel.

Inter-tracheal injection experiments on test animals were conducted by the Industrial Hygiene Foundation of America (and completed in July, 1968) using asbestos fiber taken from a mine of Johns-

Manville Corporation. Johns-Manville Corporation contributed \$1,250 to this study. This study is entitled "The Pulmonary Response to Coalinga Asbestos Dust: A Preliminary Investigation", by Paul Gross, et al. A copy of this study is available for inspection and copying at the office of Defendant's counsel.

Defendant has contributed the time of its personnel and data to a seven to ten year environmental clinical and epidemiological study of workers exposed to asbestos which is now being conducted by the Division of Occupational Health of the United States Public Health Service and is entitled "Asbestos Industry Study: U. S. Public Health Service". The following reports relate to and/or are based on such study:

"Measurement of Asbestos Exposure" by Jeremiah R. Lynch and Howard E. Ayer published in the Journal of Occupational Medicine (January, 1968), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Research on Health Effects of Asbestos" by Lewis J. Cralley, et al., and published in the Journal of Occupational Medicine (January, 1968), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"The Role of Trace Metals in Chemical Carcinogenesis-Asbestos Cancers" by J. R. Dixon, et al., unpublished, but presented at the International Congress of Occupational Health, Tokyo, Japan, (September, 1969), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Identification and Control of Asbestos Exposures" by Lewis J. Cralley, unpublished but presented at the International Congress on Occupational Health, Tokyo, Japan (September, 1969), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Techniques for the Detection, Identification and Analysis of Fibers" by Robert C. Keenan and Jeremiah R. Lynch published in the American Industrial Hygiene Association Journal (September - October, 1970), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Fibrous and Mineral Content of Cosmetic Talcum Products" by Lewis J. Cralley, et al., published in the American Industrial Hygiene Association Journal (July, August, 1968), a copy of which is available for inspection and copying in the office of Defendant's counsel.

Johns-Manville Corporation funded a study in the amount of \$142,400 which was conducted by the Mt. Sinai School of Medicine, City University of New York, entitled "Biological Effects of Modified Inorganic Fibrous Microparticles" which was commenced November 1, 1969 and was completed October 31, 1970. The purpose of the study was to explore the development of new biological test systems for fibrous materials and to determine the effect on biological activity of asbestos fiber which has been coated with a variety of physical and/or chemical substances.

A related study which was funded by Johns-Manville Corporation to the extent of \$25,000 produced a report entitled "Asbestos Hemolysis" by R. J. Schnitzer and F. L. Pundsack (an employee of Defendant), which was reported in March, 1969 and published in Environmental Research, January, 1970. A copy thereof is available for inspection and copying in the office of Defendant's counsel.

Johns-Manville Corporation has contributed \$70,000 to the Industrial Hygiene Foundation of America's "Fibrous Dust Study". The purpose of this program is to investigate factors involved in the pathogenicity of major varieties of asbestos fiber to determine the true nature of ferruginous bodies. Reports related to and/or based on this study include the following:

"Proceedings Fibrous Dust Seminar" of the Industrial Hygiene Foundation of America, published in its Medical Series Bulletin No. 16-70 (November 22, 1968), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Experimental Asbestosis: The Development of Lung Cancer in Rats with Pulmonary Deposits of Chrysotile Asbestos Dust" by Dr. Paul Gross, et al., published in the Archives of Environmental Health, Vol. 16, (Sept. 1967), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"The Pulmonary Response to Fibrous Dusts of Diverse Compositions" by Dr. Paul Gross, et al., published in the American Industrial Hygiene Association Journal, Vol. 31 (March, April, 1970), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"'Ferruginous Bodies' in Guinea Pigs" by John M. G. Davis, et al., published in the Archives of Pathology, Vol. 89, (April, 1970), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Pulmonary Ferruginous Bodies" by Dr. Paul Gross, et al., published in the Archives of Pathology, Vol. 85 (May, 1968), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Pulmonary Ferruginous Bodies in City Dwellers, A Study of Their Central Fiber" by Dr. Paul Gross, et al., published in the Archives of Environmental Health, Vol. 19 (August, 1969), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Ferruginous Bodies in Human Lungs", by Michael D. Utidjian, et al., published in the Archives of Environmental Health, Vol. 17 (September, 1968), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Asbestos Bioeffects Research for Industry", by the Industrial Hygiene Foundation of America, Inc., published in its Medical Series, Bulletin No. 11 (1966), a copy of which is available for inspection and copying in the office of Defendant's counsel.

QAMA is sponsoring a study of the health effects of asbestos, if any, on workers in the asbestos cement manufacturing industry in the New Orleans area. The total funding of this study is \$200,000 and Defendant and/or Johns-Manville Corporation is furnishing approximately \$142,000 of the sum through QAMA. In addition, Johns-Manville

in 1969 and is concentrating on the health status of present and past employees in the plants of Defendant and National Gypsum Company in and around New Orleans and has generated the following:

"Asbestosis in Asbestos Cement Workers" by Philip E. Enterline, and Hans Weill, presented at LYON Conference, (Oct. 1972), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Radiographic and Physiologic Patterns Among Workers Engaged in Manufacture of Asbestos Cement Products, a Preliminary Report", by Hans Weill, et al., published in the Journal of Occupational Medicine, Vol. 15 (Mar. 1973) a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Lung Function Consequences of Dust Exposure in Asbestos Cement Manufacturing Plants" by Hans Weill, et al., published in Archives of Environmental Health, Vol. 30, (February, 1975), a copy of which is available for inspection and copying in the office of Defendant's counsel.

The Institute of Occupational and Environmental Health of QAMA is conducting a study to relate the health status of the asbestos-exposed population to a non-exposed population in Canada. This study is under the direction of Dr. J. C. McDonald of McGill University, Montreal, Canada. This study is funded at \$474,700 for the years 1970 through 1974. The following reports have been generated by this study.

"Qualitative Aspects of Dust Exposure in the Quebec Asbestos Mining and Milling Industry" by G. W. Gibbs, presented at the Third International Symposium on Inhaled Particles, British Occupational Hygiene Society, London, (September, 1970), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Epidemiology of Primary Malignant Mesothelial Tumors in Canada" by A. D. McDonald, et al., published in CANCER Vol. 25, No. 4 (October, 1970), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Mortality from Lung Cancer and Other Causes in the Chrysotile Asbestos Mines and Mills of Quebec" by Dr. J. Corbett McDonald, et al., published in the Archives of Environmental Health, Vol. 22 (June, 1971), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Recent Developments in Asbestosis", by Dr. Premysl V. Pelnar, published in Studia Laboris et Salutis (1970) a copy of which is available for inspection and copying in the office of Defendant's counsel.

Johns-Manville Corporation also paid for certain studies by Dr. Kenneth W. Smith who was then a full-time employee of said corporation. Reports of Dr. Smith's studies are as follows:

"Asbestosis" printed in The Pneumoconioses by Kenneth W. Smith (approximately 1963), a copy of which is available for inspection and copying in the office of Defendant's counsel.

"Pulmonary Disability in Asbestos Workers" by Kenneth W. Smith printed in the A.M.A. Archives of Industrial Health, Vol. 12 (August, 1955), a copy of which is available for inspection and

copying in the office of Defendant's counsel.

"Trends in the Health of the Asbestos Worker" by Kenneth W. Smith published in the Annals of the New York Academy of Sciences, Vol. 132, Article 1 (Dec. 1965), a copy of which is available for inspection and copying in the office of Defendant's counsel.

In January, 1977, Johns-Manville Corporation contributed \$250,000 to the Mt. Sinai School of Medicine to fund a mesothelioma treatment study and program. This was a cooperative effort by the Corporation and the Heat, Frost & Insulators Union with the Union contributing a like amount toward the funding of this Program. The director of the Program is Dr. Irving J. Selikoff.

(d) Defendant objects to this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence.

52. Please state the names and addresses of the defendant's chief medical officers from 1930 until the present time, listing the periods of time each such medical officer was employed by defendant in that capacity.

ANSWER: Defendant has had a medical function beginning in the middle 1930's.

Since the middle 1930's, this function was administered by John P. Syme, Director of Industrial Relations. Mr. Syme is deceased.

In 1947, a formal health and medical program was initiated for the benefit of employees of Defendant, under the administration of H. M. Jackson, Safety Director.

Beginning in 1952, the health and medical program was administered by H. M. Jackson, Manager, Industrial Health, and K. W. Smith, M.D., Medical Director. Dr. Smith is deceased.

Beginning in 1960, the health and medical program was administered by C. L. Sheckler, Manager, Accident Prevention and Industrial Health, and K. W. Smith, M.D., Medical Director. Mr. Sheckler's address is 838 South Drive, Metedeconk, New Jersey.

Beginning in 1966, the health and medical program was administered by C. L. Sheckler, Manager, Accident Prevention and Health Administration.

Beginning in 1970 until 1972, the health and medical program was administered by C. L. Sheckler, and T. H. Davison, M.D., Corporation Medical Director. Dr. Davison's address is 2069 Deerfield Road, Deerfield, Illinois.

Beginning in November, 1972, to November 30, 1973, the health and medical program was administered by F. E. Marriner, M.D., Medical Director. Dr. Marriner's address is Mallard Crossing, Rt. 11, P. O. Box 290, Gainesville, Georgia 30501.

Beginning in 1972 until June 1, 1974, the corporate medical and health program was administered by W. R. Reitze, Manager, Accident Prevention and Health Administration.

Beginning June 1, 1974 to date, the corporate medical and health program has been administered by Paul Kotin, M.D., Senior Vice President, Health, Safety and Environment.

On July 1, 1977, William Paul, M. D., became Corporate Medical Director under Dr. Paul Kotin, with Dr. Kotin retaining all responsibilities as Senior Vice President of Health, Safety and Environment.

53. Please state to whom in the corporate structure the chief medical officer reports, also giving that person's position or job title with defendant.

ANSWER: F. H. May, Jr. Vice Chairman of the Board of Johns-Manville Corporation.

54. Please state the duties and responsibilities of the corporation's chief medical officer.

ANSWER: The principal responsibilities of the health function or Medical Department has been, among other things, to supervise and deal with medical problems of Defendant's employees.

55. Please state the names and addresses of all physicians who were employed, retained or otherwise engaged by the defendant at any of your facilities from the years of 1930 until the present time.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence. However, in an effort to be responsive, see Exhibit F attached hereto for a list of plant physicians.

56. Please state the names and addresses of all persons employed by defendant from 1930 until the present time who functioned as industrial hygienists. As contemplated by these Interrogatories, an industrial hygienist is one who performs engineering or health studies to identify, and evaluate potential occupational health hazards and suggests methods of dealing with same. Please state:

- (a) The facility or office to which they were assigned;
- (b) Their complete and precise duties and responsibilities.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence. However, in an effort to be responsive, Defendant states that the following individuals have been involved in the field of industrial hygiene as the same relates to the use of asbestos and exposure to asbestos fibers:

Hugh M. Jackson
Director, Corporate Training and Management Development
P. O. Box 5723
Denver, Colorado 80217
Employed by Johns-Manville since 1937 - cost accountant;
Industrial Relations Department; Corporate Safety Engineer.

Edmund M. Fenner
Director, Environmental Services
P. O. Box 5723
Denver, Colorado 80217
Employed by Johns-Manville since 1940; research engineer,
engineering project manager; Founding Director,
Environmental Control Department.

J. B. Jobe
2800 South University #64
Denver, Colorado 80120
Employed by Johns-Manville since 1936; sales clerk; staff
manager; special representative to the aviation industry
nationally; Regional Manager for Southern California and
operated insulation contract unit; Merchandise Manager of
Industrial Insulation Division; Sales Manager, IID: Senior
officer in charge of 5 divisions including industrial
insulation, packaging and fractions, Dutch Brand, Canada,
and the Fibre Division and Lager International; Executive
Vice President and Chief Operations Officer until retirement
in 1973.

K. W. Smith, M.D.
Deceased
Previously employed by Canadian Johns-Manville from 1944-46
as Medical Officer at Asbestos, P.Q. Medical Director
1946-51. Medical Director, Johns-Manville Corporation, New
York, New York, approximately 1952 until 1966.

F. J. Solon
Vice President - Presidential Assistant
Vice President - Economic Affairs
P. O. Box 5723
Denver, Colorado 80217
Employed by Johns-Manville since 1961; Assistant Director,
Director and Vice President, Advertising and Public
Relations; Vice President Corporate Relations; Vice
President Environmental Affairs; Vice President
Environmental Relations.

William B. Reitze
Director, Health, Safety and Environment
P. O. Box 5723
Denver, Colorado 80217
Previously employed by CIBA Corporation in area of
toxicology, pharmacology; inspector with U. S. Department of
Health; Industrial hygiene health and safety, Johns-Manville
since 1969.

Clifford Sheckler
838 S. Drive

Metedeconk, New Jersey

Consultant

Previously employed by Johns-Manville as Construction Engineer, Supervisor of Construction, Safety Engineer, Supervisor of Safety and Industrial Hygiene, Corporate Manager of Industrial Health, Manager of Occupational and Environmental Control.

Paul Kotin, M.D.

Senior Vice President, Health, Safety and Environment

P. O. Box 5723

Denver, Colorado

Employed by Johns-Manville since June, 1974.

In addition, see Exhibit G attached hereto for a list of plant hygienists.

57. Please state if the defendant's medical officers ever made at any time any recommendations and/or suggestions to the defendant pertaining to the risks or hazards to persons involved in the manufacturing or use of insulation products containing asbestos. If so, please state:

(a) Where were such recommendations and/or suggestions made?

(b) To whom were such recommendations and/or suggestions made?

(c) By whom were these recommendations and/or suggestions made?

(d) The substance of the recommendations and/or suggestions.

ANSWER: Yes.

(a) Such recommendations have been made on a continuing basis since Defendant and/or its parent corporation has employed a medical function.

(b) To corporate and division management personnel. The precise identity of such individuals involved over a long period of years is presently unknown to this Defendant.

(c) Medical officers.

(d) The substance of the recommendations consisted of the reduction of exposure to airborne asbestos fiber and particles by employees employed in Defendant's manufacturing facilities who were exposed on a continuous basis over a long period of time to 100% raw asbestos fiber. Subsequently, when the possibility of a hazard to insulation workers, applicators and mechanics using finished asbestos-bearing industrial thermal insulation products became known to the medical/scientific community, such recommendations and/or suggestions

led to the labeling of such products as set forth in Answer to Interrogatory No. 22 and research as set forth in Answer to Interrogatory No. 51.

58. Please state the names of trade association periodicals to which the defendant subscribed from 1928 to the present date. State whether or not the defendant had any knowledge of any articles being printed in industry trade journals essays, memoranda and other similar sources pertaining to the hazardous potentials of asbestos and which of such articles were received by you.

ANSWER: Over the 52 years in question, Defendant has subscribed to numerous trade periodicals, magazines and journals. Defendant objects to the balance of this Interrogatory on the grounds that the same is unduly burdensome, covering a period in excess of 50 years.

59. Please state organizations, groups, inter-company or industrial organizations to which the Defendant belongs which conducted studies or researched the relationship, if any, between exposure to asbestos fibers or products and asbestosis and lung cancer from 1945 to 1970.

ANSWER: Johns-Manville belongs or has belonged to the following organizations, some of which conducted studies or researched the biological effects of asbestos.

Thermal Insulation Manufacturers Association, Inc.
441 Lexington Avenue
New York, NY 10017
(approximately 1969 to present)

National Insulation Contractors Assn.
8630 Fenton Street
Silver Spring, MD 20910
(10/66 - present)

National Insulation Manufacturers Association, Inc.
441 Lexington Avenue
New York, NY 10017
(approximately 1958 - 1968)

Asbestos Information Association/North America
Suite 402
1835 K Street, N.W.
Washington, D. C. 20006
(approximately 1971 to present)

Asbestos Textile Institute
P. O. Box 471
Willow Grove, PA 19090
(11/16/44 - 1973)

Quebec Asbestos Mining Association
Suite 412, 5 Place Ville Marie
Montreal, Canada H3B 2G2
(approximately 1930 to present)

Asbestos Cement Pipe Producers Association
Suite 1308

1600 Wilson Blvd.
Arlington, VA 22209
(approximately 1972 to present)

Asbestos Cement Product Assn. (defunct)
New York, NY
(approximately 1955 - 1967).

60. In reference to Interrogatory 59, please state:

- (a) The type or nature of the studies;
- (b) When the studies were conducted;
- (c) The complete results of the studies;
- (d) The recommendations of the studies;
- (e) The resulting implementation of the studies by defendant;
- (f) The date when first implemented.

ANSWER: See Answer to Interrogatory No. 51.

61. Please state the amounts spent or contributed by the defendant annually from 1936 until the present time for research specifically directed to the relationship, if any, between an insulation worker's exposure to asbestos containing insulation products and asbestosis, lung cancer or any other pulmonary disease.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence. However, in an effort to be responsive, see Answer to Interrogatory No. 51.

62. Please state the amount annually contributed by the defendant to any independent medical research group or groups conducting research into the relationship, if any, between the exposure of insulation workers to asbestos and any pulmonary diseases.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence. However, in an effort to be responsive, see Answer to Interrogatory No. 51.

63. Please state the names and addresses of the organizations or groups conducting the studies referred to in answer to Interrogatory 61 and/or 62.

ANSWER: See Answer to Interrogatory No. 51.

64. Please state whether the defendant has a department, division or section devoted to scientific and/or medical research during the period from 1936 until the present time. If so, please

state when it was first formed.

ANSWER: Defendant's Medical Department has not been engaged directly in basic medical research, but Defendant has indirectly supported research activities. See Answer to Interrogatory No. 51. In addition, Defendant's Medical Department has been engaged in the direct application, the teaching of basic scientific/medical research and the general state of the medical art vis-a-vis asbestos and occupational health.

65. Please state the scientific or medical periodicals to which the defendant, its medical department or industrial hygiene division subscribed during the period between 1950 and 1964 specifying the date such subscriptions were begun.

ANSWER: Defendant is unable to state with certainty each and every scientific or medical periodical to which it has subscribed since 1950. Attached hereto as Exhibit H is a list of subscriptions indicating publications to which Defendant and/or Johns-Manville Corporation has subscribed.

66. Please state whether any of the distributors of your asbestos containing insulation products were provided with any special instructions, oral or written, in regard to utilizing said products in a manner so as to avoid exposing workers to amounts of dust exceeding the MAC or TLV. If so, please state:

- (a) When these instructions were given;
- (b) By whom these instructions were given;
- (c) Were the instructions oral or written;
- (d) The precise content of the instructions;
- (e) If the instructions were written, please attach a copy of the instructions.

ANSWER: See Answer to Interrogatory No. 20.

67. Please state whether any employee of the defendant has ever made a claim for asbestosis under the Occupational Disease or Workmen's Compensation Statute of any state. If so, please state the date that the defendant first received notice of any claim for asbestosis under the Occupational Disease or Workmen's Compensation Statute of any state and state the total number of claims filed for the years 1946 to 1965.

ANSWER: Yes. Defendant cannot determine the exact number of claims for the years 1946-65 and objects to the balance of this

Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence.

68. Is the defendant a member of the Asbestos Textile Institute? If so, when did it first become a member and list the years inclusively of membership?

ANSWER: See Answer to Interrogatory No. 59.

69. State whether any representative of the defendant was a member of the Air Hygiene Committee of the ATI or ever attended any meetings of such committee and list the years of such membership.

ANSWER: Yes. 1947, 1951-58, 1960-73.

70. State whether the defendant received copies of transcribed minutes of the various committee meetings, general meetings and Board of Directors meetings of the ATI within one year of each such meeting.

ANSWER: Generally, yes. However, Defendant is unable to state with any certainty that it has received all minutes of committee meetings, general meetings and Board of Directors meetings during the years it has been a member of the organization.

71. Has the defendant ever been a member of the Industrial Hygiene Foundation or the Industrial Health Foundation, and, if so, state the years inclusively of such membership.

ANSWER: Defendant has been a charter member of the Industrial Health Foundation. To the best of Defendant's knowledge, this foundation was organized more than thirty (30) years ago. Defendant has rendered financial assistance to the foundation since its inception.

72. State whether any representative of the defendant was in attendance at the 20th annual meeting of the IHF in November, 1955, in Pittsburgh, Pennsylvania, and, if so, give the name and current address of such attendee.

ANSWER: Yes, A. R. Fisher, deceased. At the present time, Defendant has been unable to locate records which would enable it to determine if any other employees attended said meeting.

73. State whether the defendant received a copy or copies of the Industrial Hygiene Digest published monthly by the IHF and state the date of initial receipt of such publication.

ANSWER: Yes, during the period that such monthly digests were published by IHF; provided, however that Defendant is unable to state

with certainty that it has, in fact, received each and every monthly digest.

74. State whether the defendant ever requested officials at the IHF to:

(a) Perform a search of the medical literature to determine whether any scientists or doctors were reporting cases of insulation workers with asbestosis and/or lung cancer or discussing the potential hazards incident to use of asbestos containing insulation products;

(b) Perform any studies or research into potential health hazards incident to the use of asbestos containing insulation products;

(c) Review governmental publications of Great Britain toward the end of determining whether any research was being conducted by the British Government into any potential health hazards incident to the use of insulation products containing asbestos.

(d) Review governmental publications of Great Britain to determine whether the Chief Inspector of Factories or any other British Government agency had issued any regulations or published any findings relative to potential health hazards incident to the use of insulation products containing asbestos.

ANSWER: (a) Not to the best of Defendant's present knowledge.

(b) Supported by industry, IHF has performed research studies regarding the biological effects of asbestos. To the best of Defendant's knowledge, studies were not addressed to insulation applicators.

(c) Not to the best of Defendant's present knowledge.

(d) Not to the best of Defendant's present knowledge.

75. Did the defendant sponsor since 1930 for its employees or distributors any meetings, seminars, conferences, or conventions where the subject of occupational health and exposure to asbestos was discussed.

ANSWER: Yes. See Answer to Interrogatory No. 20. In addition, Defendant distributed the following:

A booklet entitled, "What You Should Know About Asbestos and Health", published by Johns-Manville Corporation in January of 1975, a copy of which is available for inspection and/or copying at the office of Defendants' attorneys. This booklet was distributed to all employees at all locations using asbestos fiber or handling products containing asbestos fiber.

A booklet entitled, "What Every Employee Should Know

About Asbestos", published by Johns-Manville Corporation in 1973, a copy of which is available for inspection and/or copying at the office of Defendants' attorneys. This booklet was distributed to all employees at all locations using asbestos fiber or handling products containing asbestos fiber.

A pamphlet entitled, "Recommended Safety Practices for Handling Asbestos Fiber", published by Johns-Manville Corporation in November, 1973, a copy of which is available for inspection and/or copying at the office of Defendants' attorneys. This pamphlet was distributed to all employees at all locations using asbestos fiber or handling products containing asbestos fiber.

An employee notification form entitled "Dear Johns-Manville Employee", published by Johns-Manville Sales Corporation, a copy of which is available for inspection and/or copying at the office of Defendants' attorneys. This was inserted in paychecks of all employees at all Johns-Manville Sales Corporation contract units beginning in 1970.

Since 1976, Defendant has made available a Catalog of Occupational/Environmental Health and Safety Programs as listed below.

All the publications, audio-visual programs and other material listed in this catalog are available to Johns-Manville customers and public interest groups as well as to all Johns-Manville personnel.

A pamphlet entitled, "Occupational Health Guide - Asbestos", published by Johns-Manville in 1976, a copy of which is available for inspection and/or copying at the office of Defendants' attorneys. This guide is designed as a reference for supervisory personnel.

A 25-minute slide/tape presentation on industrial hygiene programs at Johns-Manville.

A 20-minute slide/tape program on health aspects of working with asbestos.

A 25-minute motion picture on occupational health risks associated with asbestos fiber.

A newspaper entitled, "The Asbestos Report", published by Johns-Manville in 1976, a copy of which is available for inspection and/or copying at the office of Defendants' attorneys.

76. If the answer to Interrogatory 75 is in the affirmative, state:

(a) The date and place of such meeting, seminar, conference, or convention where the subject of occupational health and exposure to asbestos was discussed;

(b) The name and address of the speaker or discussant.

ANSWER: See Answer to Interrogatory No. 75.

77. Did you ever warn any labor union representing insulation workers of any potential health hazard from use of insulation products containing asbestos.

ANSWER: Yes.

78. If the answer to the preceding Interrogatory is in the

affirmative, state:

- (a) The Union;
- (b) How said Union was informed;
- (c) The date and place of said information or warning;
- (d) The content and nature of said warning;
- (e) The individual or individuals warned.

ANSWER: See Answers to Interrogatories Nos. 156 and 157.

79. Did the defendant at any time give any advice, publication, warning, order, directive, requirement or recommendation, written or oral, including by U. S. Mail, which purported to:

- (a) Advise the plaintiff personally and directly of the possible harmful effects of exposure to, or inhalation of, asbestos or asbestos containing products;
- (b) Advise or recommend to the plaintiff personally and directly as to techniques, methods or equipment which would serve to reduce or guard against such potentially harmful exposure.

ANSWER: Defendant objects to this Interrogatory on the grounds that the form of the question is improper in that the same presumes a duty on the part of the Defendant to go past Plaintiffs' employer and communicate directly with employees, which is a matter of law and not the proper subject of an Interrogatory as phrased by Plaintiffs.

80. If your answer to any part of the above Interrogatory 79 is in the affirmative, state:

- (a) The nature and exact wording of such advice, warning, recommendation, etc.;
- (b) The complete identity of each source of such advice, warning, recommendation, etc.
- (c) The date, time, place, manner and circumstances when such advice, warning, recommendation, etc. was given;
- (d) The name, business address and telephone number, job title, residence address and telephone number of each and every witness to the plaintiff's reception of such advice, warning, recommendation, etc.;
- (e) The name, business address and telephone number, job title, residence address and telephone number of each and every co-worker or similar member of their trade and occupation who also received the same or similar advice, warning, recommendation, etc.

ANSWER: Not applicable.

81. Has any investigation or other reports been prepared, compiled, submitted or made by or on your behalf in this action? If so, as to each such investigation or report, state fully and in detail:

(a) The identity of same by date, subject matter, name, address, job title, or capacity of the person or persons to whom addressed or directed;

(b) The name, address, job title or capacity of the person or persons to whom addressed or directed;

(c) The name, address and present whereabouts of the person who has present custody or control thereof and the purpose of such preparation.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is too vague and ambiguous to be capable of answer.

82. Do you, your agents, employees or representatives, know of any statement having been made by the plaintiff or the defendants pertaining to any circumstances of the illness which is the subject of this law suit?

ANSWER: Unknown by Defendant at the present time.

83. If the answer to the foregoing Interrogatory is in the affirmative, was any such statement in writing, and, if so, in whose possession is such statement, and when and where it may be inspected by the Plaintiff.

ANSWER: Not applicable.

84. If your answer to Interrogatory 82 is in the affirmative and any such statement was oral, when and where was any such statement made, in whose presence was such statement made, and what was the substance of such statement?

ANSWER: Not applicable.

85. State the name of all persons who have acted in the capacity as a medical librarian for you since 1930, and give their current address, telephone number and current position with the company.

ANSWER:

Mrs. Janet Doerfler McGrath
Librarian, Health, Safety and Environment
October, 1974 to present
Johns-Manville Corporation
P. O. Box 5108
Denver, CO 80217
(303) 979-1000

86. State whether you subscribed to or received copies of the Asbestos Worker magazine and state the years of subscription or receipt of this magazine.

ANSWER: Yes. Defendant has incomplete sets of the Asbestos Worker magazine for the years 1962 through the present.

87. Please state whether you subscribed to the Asbestos magazine and list the inclusive dates of your subscription.

ANSWER: Yes. Defendant has from 1971 to present complete sets with some individual isolated copies for certain years prior to 1971.

88. Please identify all booklets, manuals, journals and all publications directed from you to customers and users of all asbestos containing insulation products and the dates said information was forwarded regarding the proper use and application of your asbestos containing insulation products.

ANSWER: See Answers to Interrogatories Nos. 20 and 75.

89. Please describe and identify all tests and experiments conducted by you to determine whether or not asbestos fibers contained within your asbestos containing products would become airborne upon their being applied by asbestos insulating mechanics or helpers. Please state the dates of all tests and experiments and the results and conclusions of each test and/or experiment.

ANSWER: Since January, 1973, Defendant has taken approximately one hundred sixty field tests for airborne concentration of asbestos fibers. All the tests were in a fabrication shop cutting asbestos-containing materials on a circular band saw or cutting and shaping material on the job and installing it. The times of the tests varied from fifteen to ninety minutes, and the sampling flow rates were between 1.8 and 2.2 liters per minute.

The results of the above tests fall into the below pattern:

	<u>Test Results</u>
Between 10.00 and 5.00 fibers	5
Between 4.99 and 3.00 fibers	30
Between 2.99 and 1.00 fibers	65
Under .99 fibers	<u>60</u>
Total Tests	160

The five test results over the then present 5.0 fiber standard did not involve on-the-job cutting, shaping or installing of insulation products. Information as to the precise dates of which such tests were conducted is no longer available to the Defendant.

90. At any time prior to 1964 were any tests or studies conducted or sponsored by you to determine:

(a) The level of dust or fiber concentration incident to:

- (i) Cutting or sawing your insulation products containing asbestos;
- (ii) Implacing the product on (1) pipes, (2) boilers;
- (iii) Tearing down the product during repair and maintenance functions;
- (iv) Mixing asbestos containing insulating cements.

(b) Whether long term (20 years or more) exposure to insulation products containing 15% asbestos or less for work periods less than 8 hours a day, both indoors and outdoors, which resulted in the liberation of asbestos dust or fiber below 5 million particles per cubic foot (mppcf) might cause asbestosis or expose such worker to an increased statistical risk of contracting;

- (i) Bronchogenic cancer;
- (ii) Mesothelioma (pleural or peritoneal);
- (iii) Gastrointestinal cancer.

ANSWER: No. However, Defendant did sponsor numerous studies on the biological effects of asbestos within the parameters of possible hazards known or perceived in the medical and scientific community and which prior to 1964 did not include insulation workers.

91. Please identify all texts, articles, publications, pamphlets, standards and rules upon which you intend to rely at the time of trial to support your case.

ANSWER: Unknown at the present time.

92. Please describe and define threshold limit value of dust containing asbestos and the application of threshold limit value to the asbestos manufacturing and insulation trade.

ANSWER: Defendant objects to this Interrogatory on the grounds that its description and definition of threshold limit value is meaningless in that said term has been well defined by agencies and bodies promulgating such threshold limit value.

93. State whether or not you had an opinion in 1960 as to whether or not the concentration of airborne asbestos fibers at job sites at which your asbestos containing insulation products were being applied by asbestos insulation mechanics were within the prescribed threshold limit values for 1960 when said application was being per-

formed and state the basis for your operation and list all publications upon which you relied in formulating said opinion.

ANSWER: Defendant has no reason to believe that said concentrations of airborne asbestos fiber were not below the then accepted threshold limit values.

94. State the date and the source from which you received your first notice and awareness of threshold limit values pertaining to the concentration of airborne asbestos fibers.

ANSWER: American Conference of Governmental Industrial Hygienists in approximately 1940.

95. Describe what action was taken by you prior to 1960 to determine whether insulation mechanics who were applying your asbestos containing insulation products were exposed to concentrations below the TLV and state the date and nature of each action taken by you.

ANSWER: See Answer to Interrogatory No. 90.

96. State your knowledge as to the manner in which your asbestos containing insulation products were cut, sawed, fabricated and prepared for application upon job sites since 1940 by asbestos insulation mechanics, and also state your knowledge as to the manner in which asbestos containing insulation cement manufactured by you was mixed by said asbestos insulation mechanics upon job sites since 1940, particularly as to the creation of dust, in the form of asbestos airborne fibers resulting from preparation and application of said asbestos insulation products and cements.

ANSWER: Johns-Manville Products Corporation manufactured cements containing asbestos. They were loose materials which were mixed with water. They were applied in plastic form with a trowel and allowed to dry. It also manufactured pipe insulations of which the asbestos content constituted less than fifteen percent (15%). These insulations were preformed to fit the surface and were tied in place with wire or bonds. It was sometimes necessary to cut the pipe insulation to fit or fabricate it. This was done with either a handsaw or a table band saw. On the average job, less than ten percent (10%) of the total pipe insulation used was cut. Said Company manufactured block insulation of which the asbestos content constituted less than fifteen percent (15%). It was sometimes necessary to hand cut or machine such block insulation. Cut or machined pieces constituted less than ten percent (10%) of the total block insulation used on the

average job.

The above products could be used and applied without the worker inhaling hazardous quantities of asbestos dust or fibers if the proper respirators are worn by the worker. Additionally, the use of dust collection systems when cutting or machining would prevent inhalation of dust and fibers in quantities that would be hazardous.

97. Are you aware of articles authored by W. C. Dresden, in Public Health Bulletin No. 241 of 1938, establishing threshold limit values for airborne asbestos fibers? If so, when did you become aware?

ANSWER: Yes, as to W. C. Dreessen; sometime subsequent to publication, but by 1940.

98. Please state whether or not you ever obtained any knowledge concerning the likelihood of asbestos inhalation being hazardous to health, and if so, state when the corporation first became aware of the hazardous potential of asbestos and its products. State how the defendant first obtained this knowledge and became so aware of said hazards and from what source this information was obtained.

ANSWER: The Corporation became aware of the relationship between asbestos and the disease known as asbestosis among workers involved in mining, milling and manufacturing operations and exposed to high levels of virtually 100% raw asbestos fiber over long periods of time by the early 1930's. The Corporation has followed and become aware of the general state of the medical art relative to asbestos and its relationship to disease processes, if any. Defendant first became

compare with known letters
aware of a possible hazard associated with the use of its asbestos-bearing industrial thermal insulation products at or about the time of the meeting of the New York Academy of Sciences, "Biological Effects of Asbestos" held in New York City in December, 1964.

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99. Please state whether or not you ever maintained a library or collection of medical information pertaining to effects of asbestos upon human health, including its hazardous effects, and if so, where said library or collection was and is located, who the person was who maintained it, and what bibliography of medical articles, materials, and other reports were a part of said library on said subject, including journals, publications, reports and all memoranda published and received by you since 1930.

ANSWER: Defendant does maintain a library of medical/scientific

information relative to asbestos. Such library is maintained within Defendant's Health, Safety and Environment Department in Denver, Colorado. Said library is maintained by Mrs. Janet D. McGrath. A copy of a 700 page bibliography of material contained within said library is available for inspection and/or copying at the office of Defendant's counsel. Due to the changing nature of any bibliography, Defendant does not represent said bibliography to be complete or accurate as of the date of filing said Interrogatories. Defendant has no information to verify that said bibliography represents all journals, publications, reports and memorandum published and received since 1930, and Defendant objects to said portion of the Interrogatory on the basis that it is so broad, indiscriminate and unreasonable that it would be unduly burdensome and oppressive to require Defendant to research all material which may have been received from 1930.

100. Please state whether or not any governmental agency has ever written letters of warning to you pertaining to the likelihood of injury to persons being exposed to asbestos and asbestos related materials of the defendant.

ANSWER: Not to the best of Defendant's present knowledge.

101. If the answer to the preceding Interrogatory is yes, which agency, when and who possesses a copy of the letter?

ANSWER: Not applicable.

102. Please annex copies of all such correspondence and notices of governmental agencies pertaining to said warnings.

ANSWER: Not applicable.

103. State whether any substance other than asbestos can produce the restrictive lung disease denominated asbestosis.

ANSWER: No.

104. State whether asbestos workers, including insulation workers, face a statistically higher risk of contracting lung disease if

- (a) They have asbestosis and
 - (i) Have never smoked;
 - (ii) Have smoked.
- (b) They do not have asbestosis and
 - (i) Have never smoked;
 - (ii) Have smoked.

ANSWER: Defendant objects to this Interrogatory on the grounds that the form of the question is improper in that the same does not

specify what is meant by the term "lung disease", especially when the question itself goes on in subparts (a) and (b) to denote asbestosis, which in fact is a lung disease.

105. State whether asbestos workers, including insulation workers, face a statistically higher risk of contracting mesothelioma, pleural or peritoneal.

ANSWER: Defendant states that there is a statistically increased incidence of mesothelioma among individuals occupationally exposed to asbestos.

106. State whether there is any relationship between cigarette smoking and mesothelioma.

ANSWER: While medical investigation continues, at the present time there appears to be no direct correlation between cigarette smoking and mesothelioma.

107. State your knowledge as to the relationship between the inhalation of asbestos fibers and cancer of the lungs, rectum, stomach and brain.

ANSWER: Defendant objects to this Interrogatory on the grounds that such Interrogatory is overly broad and burdensome. Questions calling for sum totals of knowledge are too general and all-inclusive to be answered.

108. State when your knowledge as to the association between inhalation of asbestos fibers and the contraction of cancer and asbestosis was first acquired, and state the source of that information.

ANSWER: As to asbestosis, see Answer to Interrogatory No. 98. Defendant objects to Plaintiff's use of the term "cancer" as being overly broad, but in an effort to be responsive, Defendant states that as to bronchogenic cancer, the first large-scale study indicating an increased incidence of bronchogenic cancer among individuals occupationally exposed to asbestos was Sir Richard Doll's study of asbestos textile workers in the United Kingdom. Subsequent to the Doll study in 1955, Defendant and other asbestos producers undertook to finance and support a large-scale epidemiological study in North America as to the association, if any, between bronchogenic cancer and occupational exposure to asbestos. Such study by Braun and Truan is identified in Defendant's Answer to Interrogatory No. 51. Such study did not indicate the hazard described by Doll. Subsequent and continuing research did, by the mid-1960's indicate an increased

incidence of bronchogenic cancer among individuals exposed to asbestos occurred virtually exclusively among individuals who also smoked cigarettes.

109. State whether you ever conducted or sponsored any tests relative to the possibility of a relationship between asbestos exposure and cancer, and if so, state when such studies were performed, by whom they were performed and the results of such studies.

ANSWER: Defendant has actively supported medical research into health issues possibly related to asbestos, but Defendant has not individually done basic medical research on a possible relationship between asbestos and cancer.

110. State your knowledge as to the cancer producing capabilities or amosite asbestos fibers, crocidolite asbestos fibers, and chrysotile asbestos fibers.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same, as phrased is nothing more than the statement of a conclusion of Plaintiffs. Defendant objects on the further grounds that such Interrogatory is overly broad and burdensome. Questions calling for sum totals of knowledge are too general and all-inclusive to be answered. It is obvious that Plaintiffs will contend at trial that cancer is a hazard associated with the use of asbestos-bearing products, and that Plaintiffs will endeavor to introduce independent evidence to support such contention. Expert witnesses and scientific, technical and medical literature are readily available to Plaintiffs, and to require a search by this Defendant of all people, documents and facts would be tantamount to requiring this Defendant to be a researcher for Plaintiffs and to prepare Plaintiffs' case, which is clearly improper discovery.

111. Do you subscribe to the United States Public Health Bulletin Service? If your answer is in the affirmative, please state the date when you first so subscribed to the Public Health Service Bulletin.

ANSWER: No.

112. Please state the date when you first notified your employees working in your manufacturing plants and factories as to the need to wear and use respirators.

ANSWER: Defendant states that there is no particular date certain for notification of employees, as the use of respirators is a variable depending on job function, materials used, local

ventilation, plant conditions and equipment, among other factors.

113. Please state the date when you first notified asbestos insulation mechanics applying your asbestos insulation products as to the need to wear respirators.

ANSWER: See Answer to Interrogatory No. 20.

114. State whether or not Defendant has ever published bulletins, warning its employees concerning the hazards of inhaling asbestos and coming into contact with the products of this Defendant containing asbestos. If so, please attach copies of bulletins issued by the Defendant to its employees on said subject stating the date and year that said bulletins were distributed to your employees and the name of the author of said bulletin in the employ of the Defendant.

ANSWER: See Answers to Interrogatories Nos. 20 and 75.

115. If it is your contention that plaintiff as an asbestos insulation mechanic knew that the inhalation of asbestos fibers was harmful to his health, please state how plaintiff would have acquired said knowledge. Please state the date the plaintiff became aware of the harmful effects of the inhalation of asbestos fibers.

ANSWER: Unknown at the present time.

116. State whether any officers, agents, servants, or employees of the Defendant has ever testified before any governmental body regarding the possible harmful effects of asbestos exposure. If so, state:

- (a) When and where such testimony was given;
- (b) Summary of said testimony;
- (c) If recorded, and if so, attach a copy of the answer to these Interrogatories.

ANSWER: Yes.

(a) Defendant participated in the U. S. Department of Labor Occupational Safety and Health Administration hearings on the Occupational Standard for Asbestos held March 14-17, 1972, in Washington, D. C.

(b) We do not have a complete transcript of testimony given at the hearings.

(c) Defendant respectfully refers Plaintiff to the U. S. Department of Labor for any transcript of testimony.

117. State the names of any expert witness that you intend to rely upon at the trial of this action, and identify the subject matter

upon which each said expert will testify, his opinions, and the grounds upon which the opinions are based.

ANSWER: Unknown at the present time.

118. If written documentation in the form of "scientific data" will be introduced into evidence upon a trial of this cause by the Defendant, describe each such document, and include its title, author, and the date and identity of any publication in which such data was published.

ANSWER: Unknown at the present time.

119. State the full name, present full address, telephone number of all witnesses who will testify on behalf of the Defendant upon a trial of this cause, and identify the subject matter upon which each such witness will testify.

ANSWER: Unknown at the present time.

120. Describe all written documentation which will be offered upon a trial of this cause on behalf of the Defendant against plaintiff.

ANSWER: Such written documentation has not been identified at the present time.

121. Please state if the Defendant intends to assert a defense of contributory negligence. If so, state all facts on which the Defendant bases its contention that the plaintiff was contributorily negligent.

ANSWER: Unknown at the present time.

122. If the answer to the preceding Interrogatory is in the affirmative, state in detail those witnesses who may be called to testify in reference to contributory negligence.

ANSWER: Not applicable.

123. Please state if the Defendant intends to assert a defense of incurred and/or assumed risk. If so, state all facts on which the Defendant bases its contention that the plaintiff incurred and/or assumed the risk.

ANSWER: Unknown at the present time.

124. If the answer to the preceding Interrogatory is in the affirmative, state in detail those witnesses who may be called to testify in reference to incurred and/or assumed risk.

ANSWER: Not applicable.

125. Please state if the Defendant intends to assert a defense

of the Statute of Limitations. If so, state all facts on which the Defendant bases its contention that the Statute of Limitations had run on the plaintiff's claims.

ANSWER: Unknown at the present time.

126. If the answer to the preceding Interrogatory is in the affirmative, state in detail those witnesses who may be called to testify in reference to Statute of Limitations.

ANSWER: Not applicable.

127. Please state if the Defendant intends to assert the defense that there is no causal relationship between plaintiff's injuries and death and the exposure to asbestos and asbestos materials. If so, state all facts on which you base this contention.

ANSWER: Unknown at the present time.

128. If the answer to the preceding Interrogatory is in the affirmative, state in detail those witnesses who may be called to testify in reference to no causal relationship between Plaintiff's decedent's injuries and death and the exposure to asbestos and asbestos materials.

ANSWER: Not applicable.

129. Please state if the defendant intends to assert that it does not manufacture, sell, distribute, or supply asbestos insulation materials to the Southeast area, including South Carolina, North Carolina, Georgia, Florida, Tennessee, Virginia, West Virginia and Maryland.

ANSWER: No, except for the period following 1972-73 when said products were discontinued.

130. If the answer to the preceding Interrogatory is in the affirmative, state in detail those witnesses who may be called to testify in reference to said contention.

ANSWER: Not applicable.

131. State all distributors and companies to which the Defendant sold or distributed asbestos or asbestos insulation materials in Georgia, South Carolina and Florida for the years 1950-1970.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence. In an effort to be responsive, Defendant states that the following is a list of distributors of the Industrial Products Division for the above-

referenced states as best as can be compiled from Defendant's existing records:

GEORGIA

Atlanta	Apex Supply Co.	2500 Button Gwinnett Dr. 30340
Atlanta	Graves Refrigeration -	Box 8914-Gate City Sta., 30312
Atlanta	Shook & Fletcher Insul.	P.O. Box 6992, 30315
Augusta	Insulation Supply	P.O. Box 1633, 30903
Conyers	Great Barrier Insul. Co.	951 Klondike Ct., Unit 103, 30207
Marietta	Flight Insulations	P.O. Box 6395, 30060
Savannah	Shook & Fletcher	P.O. Box 1245, 31401
Stone Mtn.	R.R. Horne & Co.	P.O. Box 422, 30083
Valdosta	North Brothers Insul.	108 Thoombs St., 31601

SOUTH CAROLINA

Charleston	J. R. Deans Company	P.O. Box 2366, 29403
Charleston	Stafford Insulation	Box 9337 Hanahan Br., 29410
Columbia	State Wholesale Heating Co.	P.O. Box 385, 29602
Florence	Loman-Garrett	Interstate Industrial Park, 29501
Florence	Thomas Stackhouse Co.	P.O. Box 27, 29501
Greenville	Graves of Greenville	1025 Lowndes Hill Rd., 29607
Greenville	Great Barrier Insul. Co.	15 Worley Road, 29608
Greenville	Guy M. Beaty Co.	P.O. Box 3598, 29608
Greenville	Sun Heating Supplies	121 Rhett St., 29601
Hanahan	Great Barrier Insul., Co.	P.O. Box 9103, 29410
Myrtle Beach	McKenzie Supply Co.	P.O. Box 1633, 29577
Spartanburg	Sun Supply, Inc.	210 Dan Morgan Ave., 29301
Walhalla	Biemann Supply Co.	P.O. Box 466, 29691

FLORIDA

Clearwater	H.B. Adams Refrigeration	2050 Palmetto St., 33515
Ft. Lauderdale	Bingham Insulation	P.O. Box 22146, 33315
Ft. Lauderdale	Coastline Distributing, Inc.	P.O. Box 5088, 33310
Ft. Myers	Baker Brothers, Inc.	2050 Hardee, 33901
Ft. Myers	Coastline Distributing, Inc.	3542 Work Drive, 33900
Ft. Myers	Pioneer Metals, Inc.	2545 Palm Ave., 33901
Gainesville	Baker Brothers, Inc.	2901 N.E. 20th Way, 32601

Gainesville	Coastline Distributing Co.	2419 N.E. 19th Drive, 32601
Jacksonville	Coastline Distributing Co.	2140 Dennis St., 32204
Jacksonville	Industrial Assoc., Inc.	1510 E. Adams St., 36206
Jacksonville	J-M Contract Unit	4859 Victor St., 32207
Lakeland	H.B. Adams Refrigeration	1109 W. Memorial Blvd., 33801
Miami	Coastline Distributing, Inc.	2555 N.W. 75th Ave., 33122
Miami	J-M Contract Unit	255 N.E. 69th St., 33138
Ocala	Baker Brothers, Inc.	1009 S.W. 17th St., 32670
Orlando	C & C Contracting	P.O. Box 5246, 32805
Orlando	Coastline Distributing, Inc.	P.O. Box 7726, 32804
Panama City	Tri-state Htg. & A/C Sply.	2501 N. Jenks Ave., 32405
Pensacola	Great Barrier Insul., Co.	P.O. Box 1931, 32502
Riviera Beach	Coastline Distributing, Inc.	1804 Avenue L, 33404
St. Petersburg	Coastline Distributing, Inc.	12928 N. 4th St., 33714
St. Petersburg	K&W Supply House	1000 30th St., South, 33733
St. Petersburg	Victor Distributing Co.	4490 60th Ave. North, 33714
Tallahassee	Baker Brothers, Inc.	860 Epps Dr., 32404
Tampa	Coastline Distributing, Inc.	5113 W. Idlewilde
Tampa	H.B. Adams Refrigeration	1109 W. Memorial Blvd., 33801
Tampa	J-M Contract Unit	6507 N. 54th St., 33610
Tampa	Mechanical Insulation	6409 Ambassador Dr., 33615
Tampa	Victor Distributing Co.	6044 N. 51st St., 33610
W. Palm Beach	Baker Brothers, Inc.	2510 Florida Ave., 33401

132. State whether the plaintiff was ever employed by you. If so, which one and when? Do you intend to attempt to set up the Workmen's Compensation shield as a defense?

ANSWER: Not to the best of Defendant's present knowledge.

133. Please state any product within your knowledge which could be or is being used for the same purpose as asbestos containing insulation material, and state when it was determined that said materials could be used as a substitute for asbestos insulation products.

ANSWER: See Answer to Interrogatory No. 10.

134. Prior to answering these Interrogatories, have you made due and diligent search of all books, records and papers of the Defendant and due and diligent inquiry of all agents and employees of the Defendant with a view to eliciting all information available in this action?

ANSWER: See Answer to Interrogatory No. 1.

135. If the answer to the preceding Interrogatory is in the affirmative, state and identify what records of books and papers were searched and state and identify what agents and employees who were questioned.

ANSWER: See Answer to Interrogatory No. 1. Defendant objects to this Interrogatory on the grounds that its Answers to Interrogatories speak for themselves, and Plaintiff's efforts to go beyond such answers constitutes improper discovery procedures.

136. State whether any distributive catalogs or other advertisement material is disseminated in Georgia by you.

ANSWER: While at the present time, Defendant has no specific knowledge as to catalogs or advertisement material disseminated in Georgia, and is therefore unable to answer this Interrogatory with precision, Defendant must assume that catalogs or other advertising materials are disseminated in Georgia, as such material is generally in the stream of commerce.

137. Do you advertise by any media whatsoever which reaches a Georgia audience?

ANSWER: See Answer to Interrogatory No. 136.

138. Have any residents or corporations or other entities of Georgia ordered your products by mail or telephone from Georgia? If so, how many during 1975 and 1976?

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad and unduly burdensome. Notwithstanding said objection, Defendant does state that mail or telephone are methods of communication which may be used by customers and distributors in Georgia to order products.

139. What percentage of your total sales for the years 1970 through the present were made in Georgia?

ANSWER: Defendant does not maintain records which would provide the information requested in this Interrogatory.

140. What is the total gross sales for the years 1970 through the present made in Georgia by you?

ANSWER: Defendant does not maintain records which would provide the information requested in this Interrogatory.

141. By what method do you solicit business in Georgia?

ANSWER: General marketing methods and techniques including distributors, salesmen and advertising.

142. Do you purchase any items from Georgia? If so, from whom and in what amount?

ANSWER: Defendant objects to this Interrogatory on the grounds that Plaintiffs' use of the terms "any items from Georgia" is so vague and ambiguous as to be incapable of answer.

143. What percentage of your total purchases are from Georgia?

ANSWER: See Answer to Interrogatory No. 142.

144. State whether you sold any asbestos products to any United States governmental agency and if so:

- (a) List each such agency;
- (b) The year of each such sale;
- (c) The final government destination of each such product sold.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence. Sales by Defendant to government agencies are generally listed under that particular agency name and without Plaintiffs supplying the names of specific entities, Defendant would be required to search through thousands of documents unrelated to the issues in the case at bar.

145. Do you do business in the area designated by the U. S. District Court as the Southern District of Georgia?

ANSWER: Yes.

146. With reference to these questions, the Defendant is identified by its present corporate name. The questions are, however, directed, in addition, to all predecessor corporations whether acquired by merger, stock purchase or otherwise. Answering such questions does not waive any positions the Defendant might take with reference to "assets only" defenses. Please state when defendant formed within its corporate structure a group known as "contract units". As contemplated in these Interrogatories, a "contract unit" is a division or group within the corporation which, inter alia, engages in the actual installation of thermal insulation products containing asbestos at job sites.

ANSWER: Approximately 1930.

147. Please define in detail the purpose and function of Defendant's "contract units".

ANSWER: To engage in the commercial application of insulation materials by the mechanism of bidding on jobs as a contractor or subcontractor.

148. Please state whether or not any Defendant "contract units" were employed at any time in South Carolina, North Carolina or Georgia for the years 1955-1970.

ANSWER: Yes.

149. If the answer to Interrogatory No. 148 is "yes", please state the dates the Defendant "contract units" were in operation, the job sites where they worked, and the names of all employees employed by the "contract units".

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is unduly burdensome. Defendant is unable to furnish information on employees, as the same were employed on an individual job basis from local unions; and consequently, employment fluctuated greatly.

150. If the answer to Interrogatory No. 149 is "yes", please provide the full name of each employee, the last known address of each employee, and the job title of each employee.

ANSWER: Not applicable.

151. On any occasion did Defendant in connection with any of its "contract units" ever advise any of the contract unit employees as to the hazards related to the inhalation and/or ingestion of asbestos fibers?

ANSWER: Yes.

152. If the answer to Interrogatory No. 151 is "yes", please note in detail the job site where such warnings were provided, the time period of the job, the foreman or superintendent in charge of the job, and the name, last known address, and job title of each employee of said "contract unit".

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence. Also, see Answer to Interrogatory No. 149.

153. State whether respirators approved by the U. S. Bureau of Mines for pneumoconiosis producing dust were provided to "contract unit" employees and when first provided.

ANSWER: Defendant objects to this Interrogatory on the grounds

that the same is not probative of any of the issues in the case at bar.

154. State whether respirators for "noxious dusts" are different from respirators approved by the U. S. Bureau of Mines for pneumoconiosis producing dust.

ANSWER: Defendant is informed that there is no term "noxious dusts" in respiratory protection terminology. Assuming Plaintiff refers to "nuisance dust" or "asbestos dust", Defendant states that there is no difference between these types of respirators.

155. List the supplier and brand name for all:

- i. Noxious dust respirators provided to all "contract unit" employees in North Carolina, South Carolina or Georgia from 1962-1968;
- ii. Respirators approved by the U. S. Bureau of Mines for pneumoconiosis producing dust to all "contract unit" employees in South Carolina, North Carolina or Georgia for the years 1962-1970.

ANSWER: See Answer to Interrogatory No. 154. Defendant has utilized respirators from numerous suppliers in past years, but believes the respirators furnished contract units were mainly those supplied by Mine Safety Appliances Company, "Dust Foe 66" brand.

156. State whether the following information was ever disseminated to "contract unit" employees and as to each item, state the manner in which it was disseminated, by whom it was disseminated, when it was disseminated and if disseminated in writing, where a copy of same is located.

- i. That band saw cutting of insulation materials containing asbestos should not be attempted without exhaust ventilation and use of respirators by contract unit employees;
- ii. That insulation materials containing asbestos should not be wrapped or pounded or cut without general exhaust ventilation or air changes or the wearing of respirators;
- iii. That old insulation material containing asbestos should not be removed or torn down without the wearing of respirators.

ANSWER: Subsequent to learning for the first time of a possible

hazard to insulation workers handling and installing thermal insulation materials containing small percentages of asbestos fiber as a result of Dr. Selikoff's studies presented in 1964, Defendant did take steps to mitigate and minimize the possible hazard to insulation workers employed in Johns-Manville Contract Units. Vacuum and exhaust equipment was purchased and installed at locations where volume fabrication, shaping and cutting of insulation products with power saws was required. Defendant made available respirators approved by the U. S. Bureau of Mines for pneumoconiosis-producing dusts and brought new emphasis to the insulation applicators as to the highly recommended practice of wearing a respirator. For several years prior to 1964, Defendant had made available dust respirators at its contract units for general dust protection. Subsequent to the Selikoff studies, Defendant undertook research and development work to reduce the amount of asbestos fibers in its thermal insulation materials and was successful in making some reduction in asbestos fiber content. At regular meetings, Defendant communicated with its district managers in charge of contract units as to the possible hazard. In turn, district managers and other supervisory personnel working under their direction, discussed possible hazards with insulation applicators. Additionally, lines of communication with insulation applicators were established by virtue of the fact that the union representing the applicators was communicating the nature of a possible hazard directly to its membership, and the applicators, in turn, were addressing questions to Johns-Manville supervisory personnel at the contract units, and such supervisory personnel thereby established a dialogue with the applicators regarding possible health hazards. Policies and changes hereinabove enumerated were implemented between late 1964 and the adoption of a temporary Federal standard for exposure to asbestos pursuant to the Occupational Safety and Health Act on December 7, 1971, and a permanent standard on July 2, 1972.

157. State when the first manual of safe practices for the handling and installation of insulation products containing asbestos was disseminated to "contract unit" employees.

ANSWER: Upon learning in 1964 of a potential hazard to industrial thermal insulation applicators from asbestos fibers in asbestos-containing thermal insulations, Defendant issued various memo-

randas, directives, etc. relative to the safe handling of such materials. Such memoranda, directives, etc. became incorporated in Defendant's Fab Shop Guide, which guide addressed itself to all aspects of using and installing thermal insulation materials. Defendant's communication to applicators was primarily oral and in the form of implementing work practices. Defendant did participate with the applicators trade union in the preparation and publication of the so-called "green sheets" which were published in the Asbestos Worker magazine and which was sent to each applicator who belonged to the union and which described possible health hazards and safe handling procedures.

158. State when the first safety meeting for "contract unit" employees was held in South Carolina, North Carolina or Georgia at which it was revealed to "contract unit" employees that:

- i. The inhalation of asbestos dust or fibers might cause asbestosis;
- ii. The inhalation of asbestos dust or fibers might cause mesothelioma;
- iii. Insulators faced a higher statistical risk than the general population of contracting (a) lung cancer, (b) mesothelioma, (c) gastrointestinal cancer.

ANSWER: As described in Answer to Interrogatory 156, subsequent to the Selikoff revelations of 1964, there was regular dialogue and communication at contract unit sites between Johns-Manville supervisory personnel and the applicators of asbestos-containing thermal insulation materials as part of the day-to-day work processes.

159. State whether "contract unit" employees who were provided respirators received instruction at the time of provision of such respirators relative to:

- i. Proper facial fitting;
- ii. Proper maintenance of the respirator;
- iii. The necessity for wearing the respirator;
- iv. The necessity to rotate respirators.

ANSWER: Yes.

160. If answer to Interrogatory No. 159 is "yes", please state the first occasion that respirators were provided for "contract unit" employees, the job site, the exact date, the names of the employees on

the job, their last known address and job title, and the specific type respirator provided.

ANSWER: See Answers to Interrogatories Nos. 149 and 153.

161. If answer to Interrogatory No. 153 is "yes", please state whether or not any physical examinations were conducted on Defendant "contract unit" employees prior to their being furnished with respirators.

ANSWER: There was no formal program prior to 1971. After July, 1971, physical examinations were offered to all contract unit employees.

162. Please state whether or not any air-borne asbestos dust concentration studies were run in the field where "contract unit" employees worked.

ANSWER: Yes.

163. If answer to Interrogatory No. 162 is "yes", please state the date such first test was run, the place such first test or study was made, the results of said test or study, and the name, last known address and title of the person or persons conducting such test or study.

ANSWER: Since early 1970 to 1973, approximately one hundred tests were taken by Defendant's Environmental Control Department at Defendant's fabrication shops and construction sites. These tests were conducted under the direction of E. M. Fenner, Director, Environmental Services.

In addition, beginning in January, 1973, Defendant had a staff engineer who visited our own contract unit job sites to make dust counts to evaluate the dust levels at various locations. Since January, 1973, Defendant has taken approximately one hundred sixty field tests for airborne concentration of asbestos fibers. All the tests were in a fabrication shop cutting asbestos-containing materials on a circular band saw or cutting and shaping material on the job and installing it. The times of the tests varied from fifteen to ninety minutes, and the sampling flow rates were between 1.8 and 2.2 liters per minute.

The results of the above tests fall into the below pattern.

	<u>Test Results</u>
Between 10.00 and 5.00 fibers	5
Between 4.99 and 3.00 fibers	30

Between 2.99 and 1.00 fibers

65

Under .99 fibers

60

TOTAL TESTS

160

The five test results over the then present 5.0 fiber standard did not involve on-the-job cutting, shaping or installing of insulation products. These tests were conducted under the direction of Fred A. Vite.

Prior to 1970, Defendant provided the services of William B. Reitze and R. D. Hindmarch, Jr., industrial hygienists, to Dr. Selikoff and the Mt. Sinai Hospital, New York, New York, for the purpose of making environmental evaluations, including dust counts, at the construction sites where thermal insulation products were being installed. This service was provided in conjunction with the joint scientific research program being conducted by the Mt. Sinai Environmental Sciences Laboratory, Johns-Manville Corporation and the Heat and Frost Insulators and Asbestos Workers Union. Subsequent recommendations of this Program were forthcoming and are contained in "Installation Hygiene Progress Reports from the Insulation Industry Hygiene Research Program, Environmental Sciences Laboratory, Mt. Sinai School of Medicine, New York".

164. If the answer to Interrogatory No. 163 is "yes", will you without a Motion to Produce, attach copies of all studies and/or tests run relating to Interrogatory No. 163 above?

ANSWER: See Answer to Interrogatory No. 163. Defendant objects to the balance of this Interrogatory on the grounds that the same is overly broad, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence.

165. If your answer to Interrogatory No. 164 is "yes" attach copies of such tests or studies, commencing with the first study up to and including the last test or study.

ANSWER: See Answer to Interrogatory No. 163. Defendant objects to this Interrogatory on the grounds that it constitutes an unreasonable burden and hardship, as the information requested is not readily available and would impose an undue burden and great expense to Defendant to search for said material.

166. Relative to Defendant's "contract units" please state whether or not Defendant's "contract unit" employees used routers, saws, sanders, grinders, or any type device used to shape, form, cut, or

fabricate asbestos contained material.

ANSWER: Workers sometimes used hand saws and knives on jobs and circular band saws in fabrication shops.

167. If the answer to Interrogatory No. 166 is "yes", please state whether on any occasion any vacuum systems, dust control devices, or watering-down systems, or systems of any kind designed to reduce asbestos dust in the air were at any time used by employees of Defendant's "contract units".

ANSWER: Yes.

168. If the answer to Interrogatory No. 167 is "yes", please state the first time such devices were used, describing in detail the type devices which were used, the job site upon which such devices were used, the names of all "contract unit" employees on said job, their last known place of address, job title and date of said job.

ANSWER: Hand saws and knives on jobs and circular saws in fabrication shops have been used since the contract units were formed. See Answers to Interrogatories Nos. 146 and 149.

169. State whether Defendant owned or possessed an ownership interest in any asbestos mines. If the answer is "yes", please answer Nos. 170 through 179.

ANSWER: Yes. See Answer to Interrogatory No. 4. Other asbestos mining facilities are operated by other subsidiaries of Defendant's parent, Johns-Manville Corporation.

170. State whether Defendant's mining employees in the course of extracting asbestos from the earth were exposed to dusts other than asbestos dust.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not probative of any of the issues in the instant case. Plaintiffs do not allege exposure to raw asbestos fiber, but to finished industrial thermal insulation products containing asbestos.

171. Relative to asbestos mines owned by Defendant, please describe in detail the mining operation; that is, whether Defendant's asbestos mines are of the "gravel pit" type -- that is, above ground, where asbestos is mined by surface method; or whether its asbestos mines are "shaft type" requiring tunnels and penetration into the earth to extract asbestos.

ANSWER: Defendant objects to this Interrogatory on the grounds

that the same is not probative of any of the issues in the instant case. Plaintiffs do not allege exposure to raw asbestos fiber, but to finished industrial thermal insulation products containing asbestos.

172. Relative to asbestos mines, please state whether or not on any occasion defendant provided respirators to its asbestos miners.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not probative of any of the issues in the instant case. Plaintiffs do not allege exposure to raw asbestos fiber, but to finished industrial thermal insulation products containing asbestos.

173. If answer to Interrogatory No. 172 is "yes", please state whether respirators were provided to all mine employees.

ANSWER: Not applicable.

174. If answer to Interrogatory No. 172 is "no", please state to what mine employees respirators were provided, giving job classification.

ANSWER: Not applicable.

175. Please state the type respirators provided describing in detail from the first such respirator provided through the current date if respirators are still used.

ANSWER: Defendant objects to the form of the question on the grounds that the same is unclear and does not limit itself to a specific group of workers.

176. Please state whether any physical examinations were given to any mine employees prior to their being furnished with respirators of any type.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not probative of any of the issues in the instant case. Plaintiffs do not allege exposure to raw asbestos fiber, but to finished industrial thermal insulation products containing asbestos.

177. Were any studies or tests done at any defendant mines relative to the dangers or hazards of inhalation and/or ingestion of asbestos fibers?

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not probative of any of the issues in the instant case. Plaintiffs do not allege exposure to raw asbestos fiber,

but to finished industrial thermal insulation products containing asbestos.

178. If answer to Interrogatory No. 177 is "yes", please attach copies of all such studies.

ANSWER: Not applicable.

179. If any medical examination of any mine employees of defendant were made, did any such medical tests reveal that mine employees of Defendant were developing asbestosis even though their job was an "outside type job" as contrasted with a job wherein they worked in a confined or limited area?

ANSWER: Not applicable.

180. State whether Defendant belonged to, or was an associate or correspondent of, the Asbestos Research Council of England.

ANSWER: Not to the best of Defendant's present knowledge.

181. State whether you sold or distributed any asbestos products to English firms or corporations for any year from 1948 to 1963.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not reasonably calculated to lead to the discovery of admissible evidence. Plaintiffs were allegedly employed in the U.S. and thus would not have been exposed to any asbestos-containing products that might have been shipped to England.

182. State whether Defendant possessed any ownership interest in any firm or corporation involved in the mining, processing or sale of raw asbestos or insulation products containing asbestos which were domiciled, headquartered or doing business in the British Isles for any year from 1948 to 1963.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not reasonably calculated to lead to the discovery of admissible evidence. Plaintiffs were allegedly employed in the U.S. and thus would not have been exposed to any asbestos-containing products that might have been shipped to England.

183. State whether any such firm or corporation possessed any ownership interest in Defendant from 1948 to 1963.

ANSWER: Not applicable.

184. When was the first claim for Workmen's Compensation filed by a "contract unit" employee in which it was alleged that said claimant had contracted:

i. Asbestosis;

- ii. Lung cancer;
- iii. Mesothelioma.

For each such claimant, list the date the claim was filed, the claimant's name and the State of filing.

ANSWER: A claim alleging asbestosis was filed in California in late 1963. Defendant objects to the balance of this Interrogatory on the grounds that the same is overly broad and unduly burdensome.

185. State whether the Defendant entered into licensing agreements with any British or German concerns which manufactured products containing asbestos.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not reasonably calculated to lead to the discovery of admissible evidence. Plaintiffs were allegedly employed in the U.S. and thus would not have been exposed to any asbestos-containing products that might have been shipped to England.

186. If the answer to the above question is affirmative, list for the years 1947 to 1964:

- (a) The name of each such British or German concern;
- (b) The year the agreement was entered into and all years between 1947 and 1964 that it was in effect;
- (c) Describe the type products manufactured by such licensees including:
 - i. The per cent composition of asbestos;
 - ii. The use of the products;
 - iii. Whether the products were marketed in the United States.

ANSWER: Not applicable.

187. State whether the Defendant at any time between 1945 and 1970 had an International Division.

ANSWER: Johns-Manville Corporation had an International Division during this time period.

188. State when the International Division was created and where it was headquartered from its inception.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not reasonably calculated to lead to the discovery of admissible evidence.

189. State whether the Defendant had an asbestos fiber division which exported asbestos fibers and, if so, whether such division for

the years 1947-1960 supplied any British manufacturers of thermal insulation products containing asbestos with any raw asbestos.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not reasonably calculated to lead to the discovery of admissible evidence. Plaintiffs were allegedly employed in the U.S. and thus would not have been exposed to any asbestos-containing products that might have been shipped to England.

190. State whether you sold or distributed any thermal insulation products containing asbestos to any British insulation contractor for the years 1947-1960.

ANSWER: Defendant objects to this Interrogatory on the grounds that the same is not reasonably calculated to lead to the discovery of admissible evidence. Plaintiffs were allegedly employed in the U.S. and thus would not have been exposed to any asbestos-containing products that might have been shipped to England.

191. State whether any Defendant's "contract units" performed any contract jobs requiring the use of thermal insulation products containing asbestos in the British Isles for the years 1947-1960 and specify the year and location of any such job.

ANSWER: No.

192. List the names and addresses of all insurance carriers which provided, inter alia, workmen's compensation coverage for occupational diseases for contract unit employees for each year from 1945 to 1966.

ANSWER: Defendant's existing records indicate that the Workmen's Compensation claims involving contract unit employees were handled from approximately July, 1956 until July, 1976 by Defendant's insurance company, The Travelers Insurance Company, Hartford, Connecticut. From July, 1976 to July, 1977, said claims were handled by Aetna Life and Casualty of Hartford, Connecticut, and since July, 1977, said claims have been handled by Ideal Mutual Insurance Company, New York.

193. State whether Defendant has a file or computer or microfilm record of correspondence between it and its contract unit workmen's compensation carrier relative to:

- i. Occupational disease claims filed;
- ii. Occupational disease claims settled;
- iii. Occupational disease claims paid by Court or Compensation Board award;

iv. Recommendations relative to introducing hygienic programs to reduce the incidence of asbestos related diseases among contract unit employees.

ANSWER: Not to the best of Defendant's present knowledge.

194. Do any of the finished insulation products manufactured by you utilize as a part of that product, asbestos paper?

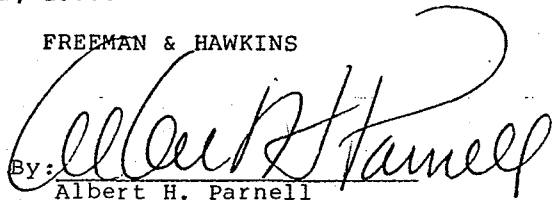
ANSWER: Defendant refers Plaintiffs to Exhibit A attached hereto for a list of its asbestos-containing insulation products. Defendant states that Plaintiffs' Interrogatory as phrased, is too broad and unduly burdensome and would require Defendant to search hundreds of product specification sheets, if in fact the same still exist, for each and every product set out in Exhibit A.

195. If the answer to Interrogatory number 194 is "yes", who manufactures the paper used in that product?

ANSWER: Not applicable.

Dated this 21st day of April, 1980.

FREEMAN & HAWKINS

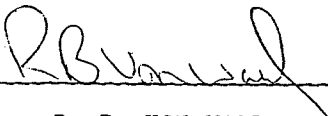
By: 

Albert H. Parnell
Attorney for Defendant,
Johns-Manville Sales Corporation
618 Fulton Federal Bldg.
Atlanta, GA 30303
(404) 522-0856

AFFIDAVIT

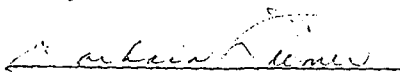
STATE OF COLORADO)
) ss:.
COUNTY OF JEFFERSON)

R. B. VON WALD being duly sworn according to law deposes and says that he is Vice President and Assistant General Counsel of JOHNS-MANVILLE SALES CORPORATION, a defendant in this action, that he is authorized to make this Affidavit on its behalf and that the facts set forth in the foregoing pleading have been supplied to him by others upon whom he relies and are true and correct to the best of his knowledge, information and belief.



R. B. VON WALD

Sworn and subscribed to
before me this 17th day
of April, 1980.



NOTARY PUBLIC.

My Commission expires June 10, 1981

EXHIBIT A

<u>PRODUCT</u>	<u>Date Manu- factured</u>	<u>Date Dis- continued</u>
<u>Block</u>		
85% Magnesia	1902	1970
SUPEREX-M	1930	1970
SUPEREX 1900	1922	1971
SUPEREX 2000	1971	1972
SUPEREX-SG	1969	1972
THERMOBESTOS	1939	1973
MIN-K 500	1958	1974
MIN-K 1301	1958	1974
MIN-K 2000	1959	1974
SONITE	1969	1974
<u>Pipe</u>		
ASBESTOCEL (aircell)	1902	1965
ANTI-SWEAT	1903	1965
85% Magnesia	1902	1970
SUPEREX-M	1930	1970
SUPEREX 1900	1922	1972
THERMOBESTOS	1939	1973
Silicated THERMOBESTOS	1966	1973
METAL-ON	1959	1973
<u>Sheets</u>		
ASBESTOCITE	1927	1975
FLEXBOARD	1927	1975
102 Asbestos Millboard	1911	
106 Asbestos Millboard	1918	
106B Asbestos Millboard	1918	
106H Asbestos Millboard	1918	
C Asbestos Millboard	1918	
219 Asbestos Millboard	1918	
XXX Asbestos Millboard	1918	
Type A Asbestos Millboard	1918	
101 Asbestos Millboard	1911	unknown
103 Asbestos Millboard	1911	unknown
105 Asbestos Millboard	1929	unknown
<u>Board</u>		
Flat TRANSITE	1930	
MARINITE 36	1955	
MARINITE 65	1955	
Veneered MARINITE	1955	
Metal Veneered MARINITE	1951	1973
TRANSITE Acoustical Panel	unknown	
DEXERAN	1970	1975
TRANSITE Core Plate	1938	
REEFERITE	1950	1973
Imperial MARINITE	1957	1973
Marine Veneer	1938	
Marine Acoustical Unit	1961	
MARINITE 23	1955	
MOLTEN METAL MARINITE	1962	
Heat Treated MOLTEN METAL MARINITE	1966	
MARINITE 30	1949	1970
MARIMET 45	1970	
PALLITE	1937	1973
Submarine Bulkhead	1963	1967

<u>PRODUCT</u>	<u>Date Manu- factured</u>	<u>Date Dis- continued</u>
<u>Finishes</u>		
AERTITE	1926	
INSULKOTE SG	1929	
INSULKOTE ST	1929	
INSULKOTE ET	1929	
<u>Paper, Felt, Blankets</u>		
Asbestos Roll FIRE FELT	1891	1973
CEILINITE	1910	1973
D. C. FLEXSTONE	1929	
Asbestos FIRETARD	1931	
#50 Asbestos Weatherproofing Felt	1931	
Commercial Grade Asbestos Paper	1929	
FIBROID Asbestos Paper	1930	
Welding Paper	1930	
Long Fiber Asbestos Paper	1930	
High Strength FIBROID Asbestos Paper	1930	
DOUBLEX Asbestos Paper	1936	
Non-Burn Asbestos Paper	unknown	
ARMATURO Asbestos Paper	unknown	
MICROBESTOS	1959	
12# Asbestos Tape	unknown	
15A Asbestos Jacket	1931	
45A Asbestos Jacket	1931	
7700 Coated Asbestos Jacket	1931	
NIAGRITE	1953	1973
ARP-40		
Asbestos Turbine Blanket	1951	
High Temperature Flexible MIN-K blankets	1963	1974
Standard Flexible MIN-K blankets	1963	1974
MIN-KLAD	1958	1972
Asbestos FIRE FELT	1891	1962
ASBESTOS-SPONGE FELT	1890	1961
Pan-O-Cel	1924	1959
Super FIRE FELT	1925	1949
Thermo FIRE FELT	1924	1949
Vitribestos	1907	1959
Vitro FIRE FELT	1924	1949
Asbestos Pipe Blanket	1898	1960
Engineers Insulating Tape	1926	1956
Asbestos Jelly Rolls	1930	1968
White Surface Asbestos Jacket	1931	1968
THERMOMAT	1963	1969
THERMOWRAP	1951	1954
THERMOTAPE	1951	1964
<u>Sealing Compounds.</u>		
ALBASEAL	1953	
DUXSEAL	1957	
Body Sealer	1954	1975
TRANOLSEAL	1958	1971
UNISEAL	1957	1974
Industrial Vent Caulking	1957	1974
Type T NODRSEAL	1954	1975
NODRSEAL	1953	1975
BRANCHTITE	1954	
H-NAVASEAL	1951	1975
HF -NAVASEAL	1955	1975
Stove Putty	1952	1971

<u>PRODUCT</u>	<u>Date Manu- factured</u>	<u>Date Dis- continued</u>
<u>Cements</u>		
SUPEREX Cement	1931	1973
THERMOBESTOS Cement	1959	1969
LAPTITE Cement	1952	
FIREITE Furnace Cement	1954	1973
Heat Treating Cement	1954	1973
Fibrous Adhesive	1930	
302 Cement	1930	1970
352 Cement	1930	1973
301 Cement	1953	1971
450 Cement	1930	1972
500 Cement	1933	1972
85% Magnesia Cement	1931	1970
ASBESTOMENT	1930	1970
MX-3808 Asbestos Filler	1951	1970
THERMOMIX 700	1966	1970
THERMOMIX 720	1966	1970
THERMOMIX 770	1966	1970
Fil Insul.	1930	1969
300 Cement	1932	1970
319 Semi-Refractory Cement	1930	1969
678 Semi-Refractory Cement	1941	1969
304 Cement	1931	1969
340 Cement	1931	1969
0352 Cement	1931	1969
400 Cement	1931	1969
364 Cement	1930	1955
ASBESTILE Cement	1930	1958
FIBROFIL	1940	1969

<u>PRODUCT</u>	<u>Date Manu- factured</u>	<u>Date Dis- continued</u>
<u>Cements</u>		
SUPEREX Cement	1931	1973
THERMOBESTOS Cement	1959	1969
LAPTITE Cement	1952	
FIREITE Furnace Cement	1954	1973
Heat Treating Cement	1954	1973
Fibrous Adhesive	1930	
302 Cement	1930	1970
352 Cement	1930	1973
301 Cement	1953	1971
450 Cement	1930	1972
500 Cement	1933	1972
85% Magnesia Cement	1931	1970
ASBESTOMENT	1930	1970
MX-3808 Asbestos Filler	1951	1970
THERMOMIX 700	1966	1970
THERMOMIX 720	1966	1970
THERMOMIX 770	1966	1970
Fil Insul.	1930	1969
300 Cement	1932	1970
319 Semi-Refractory Cement	1930	1969
678 Semi-Refractory Cement	1941	1969
304 Cement	1931	1969
340 Cement	1931	1969
0352 Cement	1931	1969
400 Cement	1931	1969
364 Cement	1930	1955
ASBESTILE Cement	1930	1958
FIBROFIL	1940	1969

LIST OF INSULATION PRODUCTS BY ASBESTOS TYPECHRYOSOTILEBlock

85% Magnesite
 SUPEREX-M
 SUPEREX 1900
 THERMOBESTOS
 SUPEREX-SG
 SUPEREX 2000

PIPE

85% Magnesite
 SUPEREX-M
 SUPEREX 1900
 THERMOBESTOS
 METAL-ON
 Silicated THERMOBESTOS

SHEETS

ASBESTOCITE
 FLEXBOARD
 102 Asb. Millboard
 106 Asb. Millboard
 C Asb. Millboard
 219 Asb. Millboard
 XXX Asb. Millboard
 106B Asb. Millboard
 106 H Asb. Millboard
 Type A Asb. Millboard

BOARD

Flat TRANSITE
 MARINITE 36
 MARINITE 65
 Veneered MARINITE
 Metal Veneered MARINITE
 TRANSITE Acoustical Panel
 DEKERAN
 TRANSITE Core Plate
 REEFERITE
 Imperial MARINITE
 Marine Veneer
 Marine Acoustical Unit

FINISHES

AERTITE
 INSULKOTE SG
 INSULKOTE ST
 INSULKOTE ET

PAPER, FELT, BLKT.

Asbestos Roll FIRE FELT
 CEILINITE
 D. C. FLEXSTONE
 Asbestos FIRETARD
 #50 Asb. Weatherproofing Felt
 Commercial Grade Asb. Paper
 FIBROID Asb. Paper
 Welding Paper
 Long Fiber Asb. Paper
 High Strength FIBROID Asb. Paper
 DOUBLEX Asb. Paper
 Non-Burn Asb. Paper
 ARMATURO Asb. Paper
 MICROBESTOS
 12 lb. Asbestos Tape
 15A Asbestos Jacket
 45A Asbestos Jacket
 7700 Coated Asbestos Jkt.
 NIAGRITE
 ARP-40

CEMENTS

SUPEREX Cmt.
 THERMOBESTOS Cmt.
 LAPTITE Cement
 FIREITE Furnace Cmt.
 Heat Treating Cement
 Fibrous Adhesive
 302 Cement
 352 Cement
 301 Cement
 450 Cement
 500 Cement
 85% Magnesite Cmt.
 ASBESTOMENT
 MX-3808 Asb. Filler
 Navy 450 Cement
 300 E Cement
 THERMOMIX 700
 THERMOMIX 720
 THERMOMIX 770

SEALING CPDS.

ALBASEAL
 DUXSEAL
 Body Sealer
 TRANOLSEAL
 UNISEAL
 Industrial Vent Caulking
 Type T NODRSEAL
 NODRSEAL
 BRANCHTITE
 H-NAVASEAL
 HF-NAVASEAL

AMOSITE

BLOCK

85% Magnesia
SUPEREX-M
SUPEREX-1900
THERMOBESTOS
SUPEREX-SG
MIN-K 500
MIN-K 1301
MIN-K 2000
SONITE

PIPE

85% Magnesia
SUPEREX-M
SUPEREX 1900
THERMOBESTOS

PAPER, FELT, BLKT.

Asbestos Turbine Blkt.
High Temperature Flexible MIN-K
Standard Flexible MIN-K
MIN-KLAD

BOARD

Flat TRANSITE
MARINITE 23
MARINITE 36
Veneered MARINITE
Metal Veneered MARINITE
MOLTEN METAL MARINITE
Heat Treated MOLTEN METAL MARINITE
MARINITE 30
MARIMET 45
TRANSITE Core Plate
PALLITE

CEMENTS

85% Magnesia Cement
THERMOBESTOS Cement

CROCIDOLITE

CEMENTS

THERMOMIX 810

MAGNESIUM HYDROXIDE FIBER

CEMENTS

THERMOMIX 390

UNKNOWN (PROBABLY CHRYSOTILE)

PIPE

ASBESTOCEL (aircell)
ANTI-SWEAT

SEALING CPD.

Stove Putty

PAPER, FELT, BLKT.

Asbestos FIRE FELT
ASBESTO-SPONGE Felt
Pan-O-Cel
Super FIRE FELT
Thermo FIRE FELT
Vitribestos
Vitro FIRE FELT
Asbestos Pipe Blkt.
Engineers Insulating Tape
Asbestos Jelly Rolls
White Surface Asb. Jkt.
THERMOMAT
THERMOWRAP
THERMOTAPE

UNKNOWN

CELAMITE
SIGMA-K

CEMENTS

Fil-Insul.
300 Cement
319 Semi-Refractory Cement
678 Semi-Refractory Cement
304 Cement
340 Cement
0352 Cement
400 Cement
364 Cement
ASBESTILE Cement
FIBROFIL

BOARD

Submarine Bulkhead

NOTE: Trade names are capitalized.

EXHIBIT C

Product

<u>Block</u>	<u>% Asbestos</u>	<u>Paper, Felt, Blankets</u>	<u>% Asbestos</u>
85% Magnesia	10	Asbestos Roll Fire Felt	98
Superox-M	10	Ceillinite	98
Superox 1900	10	D.C. Flexstone	35
Superox 2000	10	Asbestos Firetard	50
Superox SG	Composite (10)	#50 Asbestos Weatherproofing	
Thermobestos	7-12	Felt	50
Min-K 500	5	Commercial Grade Asbestos	
Min-K 1301	5	Paper	95
Min-K 2000	5	Fiberoid Asbestos Paper	95
Sonite	5	Welding Paper	99
Silicated Thermobestos	7-12	Long Fiber Asbestos Paper	88
		High Strength Fibroid	
<u>Pipe</u>		Asbestos Paper	88
Asbestocel (Aircell)	NA	Doublex Asbestos Paper	80
Anti-Sweat	NA	Non-Burn Asbestos Paper	95
85% Magnesia	10	Armature Asbestos Paper	84
Superox - M	10	Microbestos	40-97
Superox 1900	10	12# Asbestos Tape	95
Thermobestos	7-12	15A Asbestos Jacket	50
Silicated Thermobestos	7-12	45A Asbestos Jacket	50
Metal-On	7-12	7700 Coated Asbestos Jacket	50
		Niagrite	98
<u>Sheets</u>		ARP-40	60
Asbestocite	33	Asbestos Turbine Blanket	100
Flexboard	33	High Temperature Flexible	
102 Asbestos Millboard	77	Min-K Blanket	20
106 Asbestos Millboard	70-80	Standard Flexible Min-K	
106B Asbestos Millboard	95	Blanket	20
106H Asbestos Millboard	87	Min-Klad	5
C Asbestos Millboard	62	Asbestos Fire Felt	NA
219 Asbestos Millboard	84	Asbesto-Sponge Felt	NA
XXX Asbestos Millboard	67	Pan-O-Cel	NA
A Asbestos Millboard	48	Super Fire Felt	NA
101 Asbestos Millboard	NA	Thermo Fire Felt	NA
103 Asbestos Millboard	NA	Vitribestos	NA
105 Asbestos Millboard	NA	Vitro Fire Felt	NA
		Asbestos Pipe Blanket	NA
<u>Board</u>		Asbestos Jelly Rolls	NA
Flat Transite	36-48	White Surface Asbestos Jacket	NA
Marinite 36	33	Thermomat	NA
Marinite 65	55-60	Thermowrap	NA
Veneered Marinite	Composite (NA)	Thermotape	NA
Metal Veneered Marinite	Composite (NA)		
Transite Acoustical Panel	33	<u>Sealing Compounds</u>	
Dekeran	31-33	Albaseal	40
Transite Core Plate	52	Duxseal	66
Reesferite	31-37	Body Sealer	37-41
Imperial Marinite	40	Tranolseal	38
Marine Veneer	37	Uniseal	53
Marine Acoustical Unit	33	Industrial Vent Caulking	53
Marinite 23	27	Type T Nodrseal	50
Molten Metal Marinite	40	Nodrseal	55
Heat Treated Molten Metal		Branchtite	50
Marinite	40	H-Navaseal	48
Marinite 30	NA	HF-Navaseal	27
Marinite 45	43	Stove Putty	NA
Pallite	50		
Submarine Bulkhead	NA		
<u>Finishes</u>			
Aertite	15		
Insulkote SG	14		
Insulkote ST	15		
Insulkote ET	7		

Product

Cement	% Asbestos
Superior Cement	10
Thermobestos Cement	7-12
Lapite Cement	10
Fireite Furnace Cement	2
Heat Treating Cement	1
Fibrous Adhesive	18
302 Cement	53
352 Cement	100
301 Cement	15
450 Cement	15-17
500 Cement	18
853 Magnesia Cement	10
Asbestoment	6
MX-3808 Asbestos Filler	52
Thermomix 700	60
Thermomix 720	60
Thermomix 770	60
Fil-Insul	NA
300 Cement	100
319 Semi-Refractory Cement	NA
678 Semi-Refractory Cement	NA
304 Cement	NA
340 Cement	NA
0352 Cement	NA
400 Cement	NA
364 Cement	NA
Asbestile Cement	NA
Fibrofil	NA

EXHIBIT DASBESTOS-CONTAINING INDUSTRIAL THERMAL INSULATION PRODUCTS
REPLACED BY NON-ASBESTOS PRODUCTS

Asbestos-containing Product	Non-asbestos Product	Date Replaced
SUPEREX-M	SUPEREX-1600	1973
SUPEREX-1900	SUPEREX-2000	1971
301 Cement	375 Cement	1971
450 Cement	460 Cement	1972
500 Cement	505 Cement	1972
THERMOBESTOS	THERMO-12	1972/73
Metal-On (THERMOBESTOS)	Metal-On (THERMO-12)	1972/73
SUPEREX-2000	SUPEREX-2000AF *	1972
Molded Min-K (500, 1301, 2000)	Molded Min-K (500, 1301, 200)	1973/74
Flexible Min-K (High Temperature & Standard)	Flexible Min-K (High Temperature & Standard)	1973/74
Sonite	Sonite	1973/74

*AF later dropped, making product name SUPEREX-2000