

FILE NAME: Koppers/Beazer East (KBE)

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## **Beazer East - f/k/a Koppers Company**

### **A. Overview**

#### **1. Who is Beazer/ Koppers?**

Beazer East, Inc. has the liability for Koppers Company. Koppers, in addition to activities in its own right, has the liability for Freyn Engineering, Thiem and Universal Refractories. Koppers was founded in Germany before WWI. Heinrich Koppers emigrated to the United States and his company was nationalized during the War. Koppers

#### **A. Addresses:**

BEAZER EAST, INC., in its own right and as successor to Koppers Co., Inc., and other related companies including Thiem Corp., Beazer USA, Inc., and Beazer, PLC.

Koppers Building  
436 Seventh Avenue  
Pittsburgh, PA 15219

**INCORPORATED:**

**State of Delaware**

**PRINCIPLE PLACE OF BUSINESS:**

**Commonwealth of Pennsylvania**

#### **2. What did Koppers do?**

Koppers had several parts of the company involved in asbestos. (1) Koppers Engineering and Contracting Division (as well as Freyn) built and renovated steel mills, particularly Coke Ovens and Blast Furnaces. (2) Thiem/Universal Refractories made asbestos refractory materials. (3) Koppers also had a roofing division that made asbestos roofing materials. (4) Koppers also made a mastic product, Bitumastic, that contained asbestos. This product was used as a sealer.

#### **3. What did Koppers know?**

##### **A. Direct Knowledge**

Koppers hired their first industrial hygienist in the 1950's. During that period Koppers also hired Dr. Anna Baetjer of Johns Hopkins as their consulting toxicologist. Dr. Baetjer was responsible for toxicological testing of all products made by Koppers, except asbestos products. Koppers' industrial hygienist admits to having courses that discussed the hazards of asbestos in the 1950's.

##### **B. Imputed Knowledge, memberships**

###### **1. IHF.**

- A. Koppers was a member of the Industrial Hygiene Foundation, attending the 1935 organizational meeting and formally joining

- 1941-1983.
- B. Dr. Paul W. Bachman, Dir. Research & Dev. 1959-62 Trustee, 1962 Vice Chair Board. (1956 panelist Joint Technical Conference, subject manufacture, sale and use of toxic materials.) (Pictured)
  - C. C.W. Campbell, Koppers Company, Pittsburgh, PA Temporary Committee Meeting 1935
  - D. A.R. Powell, Koppers Research Corp., Pittsburgh, PA Temporary Committee Meeting 1935
2. National Safety Council 1932-??
- A. A.L. Watson, Chemical Section Advisory Committee 1942-43, at large member (former general chairman) 1938-39
  - B. L.C. Campbell, Executive Committee, Director 1938-42, NSC Vice-President, Industrial Safety 1939-40, Mining Section, Vice-Chairman 1937-38, Program Committee Chairman 1936-37
  - C. C.T. Densmore, Occupation Disease Meeting 1940
  - D. Thomas E. Lightfoot, Safety Round table, member A.S.S.E. (American Society of Safety Engineers) 1936, A.S.S.E. member at large 1935-39, Mining Section, Vice-Chairman membership 1931-32, member at large 1933-34, 1936-38
3. American Ceramic Society 1933-1963
- A. Don C. Lynn Koppers Laboratory, Mellon Institute, Pittsburgh, PA 1930-31
  - B. Silikatwerk der Heinrich Koppers Wiesenstrasse Germany/ GPO Tokyo, Japan 1934-1941
4. Chemical Manufacturers Association
5. American Petroleum Institute 1950-51, 1956-1962
6. American Society of Mechanical Engineers 1906-??
- A. Fred Denig Vice President, Koppers Research Pittsburgh, PA 1922-1935
  - B. John I Thompson Vice President, Koppers Construction Pittsburgh, PA 1918-1935
  - C. Wyman Eaton Vice President Freyn Engineering Chicago. IL 1926-1935
  - D. Henry J. Freyn, President Freyn Engineering Chicago, IL 1906-1935
  - E. Alfred J. Ebner Asst. Vice President, Freyn Engineering Chicago, IL 1926-1935

#### 4. Koppers Tested Their Products

- A. Koppers conducted acute toxicity tests on all of their products, except those containing asbestos. Testimony of Industrial Hygienist Charles Flickinger.
- P. 18 L. 22 A Well, the first thing that comes to mind  
23 is she oversaw the acute toxicity testing program Koppers had  
24 with the Industrial Health Foundation, Industrial Hygiene  
25 Foundation, was the name at that time, I think.
- P. 36 L. 2 Q And, to your knowledge, there was never  
3 any acute toxicity study done on any of the -- on any product  
4 that may have contained asbestos, is that correct?  
5 A I have no recollection.  
6 Q And there was never any Material Safety  
7 Data Sheet prepared for any product that contained asbestos  
8 that you recall?  
9 A Not that I recall.  
10 Q Do you believe that Koppers' research  
11 department kept itself aware of the various hazards of  
12 materials, kept itself current on knowledge of hazards of  
13 different raw materials that were being used?  
14 A The research department?  
15 Q Yes.  
16 A Yes.
- B. 8/18/52 Don Hanna, Safety Advisor to Paul Barry, 2222 Amherst Ave. Columbus, OH. Enclosing Saranac Laboratory analysis of Thiemold. Demonstrates awareness of Saranac laboratories.

#### Documents, Defendant Specific:

1. Interrogatories Greco v. A-Best 10/3/97 Cuyahoga County, Ohio, Blake v. A-Best 6/3/97 Butler County, Ohio
2. Interrogatories Mike Ilich v. General Refractories Comapny, et al 1/19/90 Mahoning County, Ohio (Universal/ Theim)
3. Ohio Workers Compensation Records, Self authenticating, containing affidavits.
4. Contract Documents, site specific, produced by the Defendant

#### Documents, Membership and Liability

1. IHF Exhibits
  - A. Temporary Committee 1935
  - B. IHF Exhibits Abstracts and Proceedings 1937, 1941-1983
2. National Safety Council Exhibits 1932-1970
3. American Ceramic Society Exhibits. Documents The Bulletin, Ceramic Abstracts 1930-1963
4. American Society of Mechanical Engineers, Mechanical Engineering 1933-1939,

Transactions membership lists 1934-35, 1940.

5. American Petroleum Institute 1950-51, 1956-62.
6. Seventh Saranac Symposium (Anna Baetjer, attendee.)
7. Chemical Manufacturers' Association LAPI Committee Brochures on warnings

**Depositions**

1. Charles Flickinger, Industrial Hygienist
2. William Ice, Engineering & Contracting
3. Nancy Dombrowski, Corporate Rep
4. Drew Bachman, Roofing Products

**Interrogatories to Read:**

3. Please describe Defendant's corporate history including any:
  - (a) Mergers;
  - (b) Consolidations;
  - (c) Asset purchases;
  - (d) Acquisitions; or
  - (e) Spinoffs.

(a) Koppers Company, inc. was incorporated in Delaware in 1944. On June 16, 1988 BNS, Inc. ("BNS"), a Delaware corporation and indirect wholly-owned subsidiary of Beazer PLC, acquired indirectly more than 90% of the outstanding common stock of Koppers Company, Inc. On November 14, 1988, BNS acquired indirectly the balance of the common shares. On January 26, 1989, the name of Koppers Company, Inc., was changed to Beazer Materials and Services, Inc. ("BM&S"). On April 16, 1990 BM&S changed its name to Beazer East, Inc.

(Note: From 1969 to 1975 Universal Refractories, a subsidiary of Thiem Corporation made asbestos hot top rings. Koppers acquired Thiem in 1976 and merged Universal Refractories into Thiem. Koppers sold the assets of Thiem in 1981. Testimony of Mary Dombrowski Wright March 27, 1998. P. 36-37.)

5. Has Defendant ever engaged in the mining, manufacturing, selling, marketing, installation or distribution of asbestos-containing products? If so, please state the following:
  - (a) The name of the company engaged in the activity (whether it is Defendant, Defendant's predecessor, or Defendant's subsidiary);
  - (b) As to each product mined, manufactured, sold, marketed, installed or distributed, please state the following:
    1. The trade or brand name.
    2. Its identification number (model, serial number, etc.).
    3. The time period it was manufactured, mined, marketed, distributed

- or sold.
- 4. Its physical description including color, general composition, and form.
- 5. A detailed description of its intended use and purpose.
- 6. A detailed description of the type package in which it was sold, listing the dates of each type of package used, a physical description of the package, and a description of any printed material or trademarks that appeared thereon.
- 7. The percent of asbestos which it contained.
- 8. The percent of asbestos by asbestos type (amosite, crocidolite, tremolite, anthophyllite).
- (c) The time period during which each of these products were on the market;
- (d) A description of the physical composition of each product;
- (e) How each of these asbestos-containing product can be distinguished from those of competitors;
- (f) A description of the physical appearance of such product;
- (g) A detailed description of the intended uses

(a) Koppers Company, Inc.

(b) Engineering and Construction Division:

(1) The Engineering and Construction Division of Koppers Company ("the E&C Division") never manufactured any asbestos containing product. The E&C Division provided design and construction services for the erection of steel-making facilities, including coke oven batteries, basic oxygen furnaces and the like. While E&C Division employees installed asbestos containing products during the initial construction, those products were manufactured by other companies, and it was the E&C division's ordinary practice that the customer, rather than the E&C Division, would furnish the materials for incorporation into the structure, even on initial construction.

Koppers Company Roofing Products

(1) Attached is a listing of the Koppers Roofing products that contains asbestos, as well as descriptions of the products and their asbestos content. Also attached is a product announcement issued by Koppers Company relating to asbestos in roofing products.

Coatings: (Note can be spread or sprayed)

Liquid Asphalt No. 472

Asphalt Roof Coating No. 454 (Coatings to coat roofing system like paint, for whole roof.)

Aluminum Roof Coating 435 ( also 445)

Koppers Roof Resaturant 410 (Resaturant is to penetrate roofing system for spot

repairs.)

Koppers Fiber Coating No. 415

Koppers Roof Resaturant 425

Insulation/Felt:

Exeltherm II Roof insulation. Board stock to insulate roof.

No. 15 Tar Saturated Asbestos Roof Felt (roll material)

***(Note: Does not disclose Universal Refractories/Thiem Hot Tops.)***

Mike Ilich v. General Refractories Company, et al 1/19/90 Mahoning County, Ohio  
Interrogatory 1. Identify and list each asbestos-containing product manufactured, sold or distributed by you since 1930, including ut not limited to, wallboard and drywall products, thermal insulation products, fireproofing products, pipecovering and pipe insulation, and refractory products.

Uni-Board Fiber Inserts            1969-1975

Uni-Flex Fiber Rings            1970-1975

Uni-Board Fiber Sideboards    1972-1975

One type of Uni-Flex contained 7.5% chrysotile and the other contained 18-22% amosite. Uni-Board fiber inserts and sideboards contained 11.1% asbestos. At first it was all chrysotile and was changed to have a predominant amount of amosite.

8.01    Has this defendant ever purchased asbestos containing products from any other defendant?

Yes. Beazer East purchased roofing felt at various times from Carey, GAF and Celotex

8.02    If the answer to the preceding Interrogatory is yes, please state the following:

- (a)    name each defendant from whom this defendant purchased any asbestos containing product;
- (b)    list each product purchased from each co-defendant;
- (c)    list the dates of each purchase of asbestos-containing products from each co-defendant.

(a) Carey, GAF Corporation, Celotex Corp.

(b) Roofing felt

(c) Koppers Roofing Division did not have fixed contracts with the suppliers. Rather, Beazer East bought felt on an "as needed" basis for one of the three companies. Koppers Roofing Division sold tar-saturated roofing felt containing asbestos from 1964 until 1985.

9.       Did Defendant or any of Defendant's distributors, as listed in response to Interrogatory

Nos. 8.1, 8.2, and/or 8.3 have sales representatives who specifically called on the sites listed on Exhibit 1, attached hereto, from 1945 to 1975? If your response is yes, as to each facility, please state the following:

- (a) The name and last known address of each such representative and whether they are still employed by Defendant;
- (b) The period of time they acted as your representative;
- (c) Their general responsibility as to each facility;
- (d) Whether that person is still alive; and
- (e) Any documents relating, referring or pertaining thereto.

Koppers E&C division does not have any sales representatives. Because of the limited number of companies like Koppers company that undertook construction and improvements to steel mills, customers solicited Koppers Company for bids, rather than Koppers soliciting business. As a result, Koppers company has no sales representatives who called on any of the listed sites from 1945-1975. Further, Beazer East no longer maintains sales records from Koppers roofing Products division and thus is unable to respond to interrogatory no. 8.3 regarding what companies may have sold Koppers roofing felt in Ohio during the specified period.

*(Note: This is Directly refuted by William Ice deposition)*

27. Please identify all physicians, industrial hygienists, and other employees (including their names and addresses) who were employed, retained or otherwise engaged by Defendant for research, investigation or study concerning asbestos or asbestos-related diseases.

Koppers Company employed Donald McGraw, M.D. from 1982-1988. Dr. McGraw's duties included dealing with asbestos issues as they related to Koppers employees. (Note fails to discuss several people, such as Industrial Hygienist Charles Flickinger, Dr. Anna M. Baetjer, toxicologist, of Johns Hopkins University, Dr. Kolba, Dr. Alonzo Lawrence, who came to Koppers in the mid 1970s, organized Corporate Occupational Safety group, John Butala, Koppers toxicologist, or Mary Ann Stock, toxicologist for Koppers)

- 30.2 Has any engineer, industrial hygienist or physician in your employ been a member in any professional group, trade group or any of the following groups:
- Asbestos Textile Institute
  - National Insulation Manufacturers Association
  - Thermal Insulation Manufacturers Association
  - Quebec Asbestos Mining Association
  - Asbestos Information Association
  - Industrial Health Foundation
  - Industrial Hygiene Foundation

Iron and Steel Institute  
National Safety Counsel  
Refractories Institute;  
Air Hygiene Foundation of America, Inc.  
Sprayed Mineral Fiber Association

If the answer is yes, state the following:

- (a) The name of the group or groups in which the individual(s) were members;
- (b) The name and position individual(s) within the Defendant, as defined, who were members;
- (c) The years the individual(s) were members of the groups;
- (d) Whether the Defendant paid the individual(s) dues or membership fees or reimbursed the individual(s) for dues or membership fees in the group.

Koppers Company was a member of the Industrial Hygiene Foundation from 1949 until the early 1980s. Beazer East further believes that some Koppers Company employees individually may have been members of the Industrial Health Foundation.

(b) Koppers company was a corporate member of the Industrial Hygiene Foundation. Beazer East does not know the identities of any of the employees who may have been members of the Industrial Health Foundation.

***(This is refuted with IHF documents and National Safety Council Documents)***

33. Please state the year that Defendant was first advised of either threshold limit values or maximum allowable concentrations of both asbestos dust and total dust by the American Conference of Governmental Industrial Hygienists and state the name of the employee/official of the company receiving such advice.

Koppers Company was generally aware of threshold limit values, maximum allowable concentrations and permissible exposure limits as they were published and changed by Federal and state governments from the incorporation of the company in 1944. Koppers **Company was first specifically advised of TLV's issued by the ACGIH in the mid-1980's when Koppers was first brought into asbestos litigation.**

***(Refuted by Charles Flickinger.)***

**Membership Documents:**

**American Ceramic Society**

1930 ACS Vol. 9 P. 479 Mentions asbestosis and silicosis article from 1930

**Don C. Lynn** Koppers Laboratory, Mellon Institute, Pittsburgh, PA membership

1931 ACS Vol. 10 P. 531 Effects of Asbestos dust on lungs article.

- Don C. Lynn** Koppers Laboratory, Mellon Institute, Pittsburgh, PA membership
- 1933 ACS Vol. 12 Multiple articles on dust diseases, and asbestos.
- Koppers Corporate member**
- 1937 Attendees of the Temporary Committee meeting:  
C.W. Campbell, Koppers Company, Pittsburgh, PA  
A.R. Powell, Koppers Research Corp., Pittsburgh, PA  
A.L. Watson, Koppers Co., Pittsburgh, PA
- 1936 ACS Vol. 15 P. 262 Swedish Commission  
P. 49 Views on Silicosis.
- Koppers Corporate member**
- 1937 ACS Vol. 16 P. 137-139 summaries of articles including asbestos.  
P. 164 Asbestos German Workers comp statute noted.  
P. 184 11 articles on asbestosis from 1930  
P. 208-210 30 1931 articles on asbestos,  
P. 210 4 articles from 1931 on cancer  
P. 417-419 lengthy summaries of articles on asbestos and dust disease.
- Koppers Corporate member**
- 1939 ACS Vol. 18 P. 63 Article on asbestosis
- Koppers Corporate member**
- 1940 ACS Vol. 19 P. 79 two articles mentioning asbestosis,  
P. 81 one asbestos article  
P. 149 one asbestos article.  
P. 165 Two articles on asbestosis  
P. 205-206 one asbestos article.  
P. 228 One asbestos article.
- Koppers Corporate member**
- 11/10/42 IHF Proceedings Seventh Annual Meeting, Industrial Hygiene Foundation Nov. 11,  
1942. Shows Koppers Company as new member.
- 1943 ACS Vol. 22 P. 64 one dust control article and one asbestos article.
- Koppers Corporate member**
- 1945 ACS Vol. 24 P. 47 Prevention of asbestosis article
- Koppers Corporate member**
- 1946 Regulation 247 Ohio Department of Health's Legal Requirements for the Prevention  
and Control of Industrial Public Health Hazards, Regulation 247 of  
the Legal Requirements for the Prevention and Control of Industrial  
Public Health Hazards. Specified a maximum allowable  
concentration for exposure to dust containing asbestos fiber. Adkins  
v. GAF Corp., (S.D.Ohio 1988) 706 F.Supp. 559, 562, aff'd 923  
F.2d 1225.
- 6/13/46 Workers comp D.W. Theim, President Theim Products Company, Milwaukee, Wis.  
to Don Hanna, Safety Advisor, Industrial Commission of Ohio.  
Demonstrates Ability to test. "All of these washes have been tested

|                        |                                                                                                                                                                                                                                                                  |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | and approved by Employers' Mutual Life Insurance Co. Of Wis.<br>And leading insurance companies in Michigan and Illinois.”                                                                                                                                       |
| 7/5/46 Workers comp    | Don Hanna, Safety Advisor, industrial Commission of Ohio to<br>R.W. Getz, Personnel Director, Unit Cast Corporation, Toledo, OH.<br>Enclosing results of analysis of dust sample by Saranac laboratories.<br>Demonstrates awareness of Saranac, ability to test. |
| Sept. 1946 ACS         | P. 140 Histology of asbestosis<br><b>Koppers Corporate member</b>                                                                                                                                                                                                |
| Nov. 1948 ACS          | P. 260 Asbestos, two articles<br><b>Koppers Corporate member</b>                                                                                                                                                                                                 |
| 1950 ACS               | One article on dust diseases<br><b>Koppers Corporate member</b>                                                                                                                                                                                                  |
| Feb. 1951 ACS          | P. 42 Two articles on dust diseases.<br>P. 77 One article on asbestos dust diseases.<br><b>Koppers Corporate member</b>                                                                                                                                          |
| 8/18/52 Workers Comp   | Don Hanna, Safety Advisor to Paul Barry, 2222 Amherst Ave.<br>Columbus, OH. Enclosing Saranac Laboratory analysis of<br>Thiemold. Demonstrates awareness of Saranac laboratories, ability<br>to test products.                                                   |
| 9/22-26/52 7th Saranac | Anna Baetjer, MD, Koppers consulting toxicologist attended.                                                                                                                                                                                                      |
| 1963 Ceramic           | P. 63 One article on asbestos dust<br><b>Koppers Corporate member</b>                                                                                                                                                                                            |

5. **Contracts** (Various documents produced for product use and product ID.)

## ***Depositions***

***Charles Flickinger*** 6/11/98 Greco v. A-Best, et al.

Cuyahoga County, Ohio.

### **(Background)**

P. 12 L. 9-25

P. 13 L. 1-24

P. 14 L. 2-7, 25

P. 15 L. 1-25

P. 16 L. 1-5

### **(Consulting Toxicologist, Product analysis, IHF membership)**

P. 18 L. 8-25

P. 19 L. 1-25

P. 20 L. 1-25

P. 21 L. 1-4, 8-19

P. 22 L. 18-25

P. 23 L. 1-25

P. 24 L. 1-5, 12-24

P. 25 L. 8-12, 21-25

P. 26 L. 1-8, 14-24

### **(Lab at Mellon Institute)**

P. 28 L. 20-25

### **(Asbestos)**

P. 33 L. 24-25

P. 34 L. 1-4, 8-11

P. 35 L. 19--22, 24-25

P. 36 L. 1-16

### **(Library)**

P. 40 L. 2-4

### **(ACGIH Publications)**

P. 43 L. 15-25

P. 44 L. 1-13

### **(American Ceramic Society and Knowledge)**

P. 54 L. 22-25

P. 55 L. 1, 3-16

P. 56 L. 8-9, 11-25

P. 57 L. 1-3, 5-25

P. 58 L. 1-25

P. 59 L. 1-25

P. 60 L. 1-25

P. 61 L. 1-16, 18-25

P. 62 L. 1, 4-8, 10-15, 17-22, 24-25

P. 63 L. 1-5, 11-20, 24-25

P. 64 L. 1-11, 14-21, 23-25

P. 65 L. 2-10, 12-17, 19-25

P. 66 L. 2-7

### **(Warnings, Duty to Warn, Duty to Test)**

P. 66 L. 8-13, 20-25

P. 67 L. 1, 3-6, 8-12, 14-19, 21-25

P. 68 L. 13-16, 18-25

P. 69 L. 1, 3-10, 12-15, 17.

P. 70 L. 2-16

P. 72 L. 6-8, 10, 14-18, 20-25

P. 73 L. 1-7, 9-14, 16-24

P. 74 L. 1-15, 17-22, 25

P. 75 L. 1-3, 5-9, 11-21, 23-25

P. 76 L. 1-3, 5-10, 14-25

P. 77 L. 1-11, 13-20, 22-23

P. 78 L. 5-8, 10-19.

**Charles Flickinger** 6/11/98 Greco v. A-Best, et al.  
Cuyahoga County, Ohio.

**(Background)**

12

9 Q Now, from the deposition that you gave in  
10 the summer of '97, you began at Koppers in 1948, is  
that

11 correct?

12 A Correct.

13 Q And you worked for a few years as a  
14 chemical engineer in Kearney, New Jersey?

15 A Kearney, K-E-A-R-N-E-Y, Kearney.

16 Q K-E what?

17 A K-E-A-R-N-E-Y.

18 Q Was that a seaboard coke plant?

19 A Correct.

20 Q And then from there, you moved from the

21 job in Kearney to a job as night manager at Verona,  
22 Pennsylvania, at the research department, would  
that be

23 correct?

24 A No. I continued in chemical engineering

25 at Ver- -- well, I started in Verona in the pilot plant  
and

13

1 that went through around '55, '56.

2 Q Okay.

3 A And then I was made night supervisor.

4 Q I was going to try to shorten it by

5 summarizing what was said before. Let me go  
through your

6 background, then.

7 When did you graduate from Penn State?

8 A 1948.

9 Q Have you worked for anybody besides

10 Koppers?

11 A No.

12 Q And when you came out of school and went

13 to work for Koppers in New Jersey as a chemical  
engineer,

14 what kind of work were you doing?

15 A Pilot plant operations.

16 Q What was that?

17 A It would be a small scale chemical

18 plant-type of operation, meaning, you worked with  
25, 50 or

19 100 gallons of size kettles versus 2,000, that sort of  
thing,

20 or small distillation units versus the big outside  
towers.

21 Q And was that dealing with coke

22 by-products?

23 A Most of my involvement was with styrene

24 and its polymerization.

14

2 Q And when you moved to Verona, what work

3 were you doing there as a chemical engineer?

4 A Well, I started out operating polymer

5 pilot plants and then I was named like the supervisor  
of, you

6 know, the pilot plant, of the polymer pilot plant. It  
was a

7 three shift operation.

25 Q Now, after night manager, what was your

15

1 next job?

2 A I think it was titled manager of

3 facilities, which included the guards, the janitors.  
And

4 then most of that job was being safety engineer for  
the

5 Verona facility.

6 Q Now, while you were in this job, was that

7 the point when you were approached to take graduate  
work and

8 become an industrial hygienist?

9 A That's correct.

10 Q And, approximately, when did that occur?

11 A I would say 1957.

12 Q And it took you about two years to

13 complete your degree?

14 A Yes.

15 Q And when did you graduate?

16 A 1960.

17 Q And at that point, were you titled

18 industrial hygienist?

19 A No. I think the -- I retained the safety

20 engineer title for, I don't know, another -- for a short  
time

21 and then I was named industrial hygiene and safety  
engineer

22 for the research department.

23 Q And did you maintain that job until

24 somewhere in the mid '70s?

25 A Yes.

16

1 Q And what happened then?

2 A The company brought in Dr. Lawrence and

3 he organized the corporate occupational health and  
safety, I

4 believe was the title, group in the Koppers' building

5 downtown.

**(Consulting Toxicologist, product analysis, IHF)**

18

8 Q Dr. Baetjer was a consulting toxicologist

9 for Koppers, that's correct?

10 A Yes.

11 Q She was consulting beginning in the '50s

12 or before?

13 A Well, my knowledge would have started

14 around, of her, and my impression was it would  
have been

15 about 1957. Something like that.

16 Q So almost as soon as she came in, she

17 started asking or putting out there that Koppers  
needed an

18 industrial hygienist?

19 A That was my impression.

20 Q Do you remember what kinds of consulting

21 work she did as a toxicologist?

22 A Well, the first thing that comes to mind

23 is she oversaw the acute toxicity testing program  
Koppers had

24 with the Industrial Health Foundation, Industrial  
Hygiene

25 Foundation, was the name at that time, I think.

19

1 My relation with her was strictly within

2 the research department. So I can't honestly say if or

3 whether she did anything, you know, beyond -- well,  
she, my

4 understanding was that Dr. Kolka was her contact  
person in

5 the research. And then she went through him, you  
know, not

6 in a sense to come to me, but I mean, she would call  
him to

7 set up dates for visits, that sort of thing.

8 Q Did you ever have any direct dealings

9 with Dr. Baetjer?

10 A Yes.

11 Q And what kinds of things do you remember

12 talking about or working together on?

13 A Well, for the research department, I

14 started preparing Material Safety Data Sheets. And  
what we

15 did was find one published by Dow in the, I think it  
was in

16 the American Industrial Hygiene Journal, and we  
adopted that

17 format with one that was titled Koppers Company.

18 Q And do you remember when Koppers first

19 started doing these Material Safety Data Sheets?

Was that in

20 the '60s or early '70s?

21 A That was, as far as I know, I was the

22 only one that was doing it and that would have been  
in the

23 early '60s, I'd say.

24 Q Now, can you tell me what a Material

25 Safety Data Sheet is?

20

1 A Well, at least the ones that I prepared  
2 were single page, well, both sides, 8 and a half by 11.  
The  
3 top part would have -- the top part of the title page  
would  
4 have the material's name and physical properties.  
That would  
5 take in about the top third.  
6 And then the bottom two-thirds, there  
7 were boxes, so to speak, with the different toxicity  
roots,  
8 meaning ingestion, inhalation, skin penetration and I  
think  
9 skin contact.  
10 In each of those boxes were a series of  
11 the hazard potential ranging from severe to low -- a  
low  
12 order of toxicity.  
13 Q Did it also discuss precautions?  
14 A Well, that was on the other side.  
15 Q Okay.  
16 A And -- well, then the other side had  
17 precautions and the type of, say, respiratory  
equipment or  
18 skin -- well, for inhalation protection, skin  
protection.  
19 There were several other items. I don't recall  
exactly.  
20 Q Now, you mentioned the materials name and  
21 properties; was that for raw materials that were  
being used  
22 in the research department or was that for finished  
products  
23 that were being used or what?  
24 A Of raw materials and then as the research  
25 department would turn over, well, research of  
materials ready

21

1 for commercialization, they would have a report.  
And then in

2 the back of that report, I would have safety data  
sheets

3 relative to the product and the materials that went  
into the

4 process.

8 Q Was that the development of products for  
9 the entire Koppers Company or was it for one  
particular

10 segment of Koppers?

11 A Well, basically, it was overall.

12 Q So if I understand what you said

13 correctly, the research department served as  
research and

14 development essentially for all of Koppers; and  
once a

15 product was developed that could be commercially  
produced,

16 all of the material was sent to that division ready for  
them

17 to try to put it into commercial production; would  
that be an

18 accurate statement?

19 A Yes.

22

18 Q You also mentioned that Dr. Baetjer was

19 working with Koppers on an acute toxicity program  
with the

20 Industrial Hygiene Foundation, is that correct?

21 A Yes.

22 Q Can you describe that program a little

23 bit for us so I can understand what the program  
was?

24 A Essentially, the various products of

25 Koppers that had no basic acute toxicity data were  
evaluated

23

1 for acute toxicity.

2 Q Now, was this the commercial products

3 that were being put out there in the market by

Koppers, is

4 that what you're talking about?

5 A Yes.

6 Q And she was, for the ones that Koppers

7 didn't already know the toxicity data, she was developing

8 data for the other existing products?

9 A She would have a sample of that product

10 submitted to the IHF and they would do the acute toxicity

11 testing on animals.

12 Q So did Dr. Baetjer function as kind of a

13 middle person between Koppers and the IHF in coordinating

14 studies on products or would that be an accurate

15 representation of her role in that or was she

developing the

16 program itself?

17 A I would say that she acted as the

18 supervisor or professional person in, you know,

reviewing

19 their toxicity reports. And then I would send a copy to

20 whatever division -- well, several copies to the particular

21 division that, you know, had that product and I would write a

22 cover letter.

23 And she would, you know -- well, we would

24 get together, I guess you'd say, on a cover letter and I'd

25 send her a copy so that she would review whatever statements

24

1 that I made relative to that.

2 Q Now, you mentioned that she was working

3 on products for which Koppers didn't already know the

4 toxicity data, is that correct?

5 A Yes.

12 Q Do you know how she came to select a

13 particular product for a study?

14 A Her contact person in research was Dr.

15 Kolka.

16 Q Was he also involved in this acute

17 toxicity program?

18 A Other than my sending him a copy of all

19 correspondence, no.

20 Q So at Koppers, who, besides yourself and

21 Dr. Baetjer as a consultant, were involved in this acute

22 toxicity program directly in collecting the data and

23 disseminating it?

24 A I'm not aware of anybody else.

25

8 Q Did she publish any of her results, do

9 you know, outside of Koppers in any kind of a professional

10 publication?

11 A Her name was widely known, but I don't

12 recall any publications, per se.

21 Q Do you know what was done with the

22 Material Safety Data Sheet information by the divisions that

23 were producing the products commercially, do you know if they

24 were distributed outside the company?

25 A No. It was directed towards the safety

26

1 director there. That's all I actually know.

2 Q Now, Koppers was already a member of the

3 IHF when you began in research, is that correct?

4 A I don't honestly know.

5 Q Well, actually, from the IHF we have

6 obtained the new members list for 1942 and that was the year

7 that Koppers joined and I'm going to show you that particular

8 page.

14 Q When you were with Koppers, was Koppers  
15 active within the Industrial Hygiene Foundation in  
sponsoring  
16 research or fellowships?  
17 A Other than the acute toxicity -- well,  
18 I'm saying acute. There were others, but other than  
the  
19 toxicity testing program, I wasn't aware; they had  
annual  
20 meeting and that sort of thing that I went to.  
21 Q Do you know if anybody else from Koppers  
22 attended the annual meetings of the Industrial  
Hygiene  
23 Foundation?  
24 A I couldn't say for sure.

**(Lab at Mellon Institute)**

28  
20 Q Did Koppers ever have a laboratory or a  
21 fellowship with the Mellon Institute that you're  
aware of?  
22 A Yes, when I started in 1948, the  
23 laboratory people that later came to Verona were --  
well,  
24 part of the Mellon Institute, but I understand they  
were  
25 Koppers' people or did Koppers' research.  
  
29  
1 Q Do you know what kind of research they  
2 were doing at Mellon Institute?  
3 A Well, it was the same groups that moved  
4 to Verona in '51 or near the end of '51.  
5 Q So it would be the same research?  
6 A Yes. The laboratory people

**(Asbestos)**

33  
24 Q Do you know whether any of the acute  
25 toxicity studies or Material Safety Data Sheets that  
you

34  
1 worked with or that were handled by Koppers  
involved  
2 discussions of hazards of asbestos?  
3 A I'm pretty sure that I made one or  
4 prepared one for asbestos.  
8 Q You were aware that asbestos was  
9 hazardous as part of your studies for your masters in  
10 industrial hygiene, correct?  
11 A Correct.

35  
19 Q How expensive was it to test a product  
20 for the acute toxicity program? Did it seem to you  
to be a  
21 very expensive undertaking or something that was  
reasonable  
22 economically?  
24 A What comes to mind is about \$2,000, which  
25 isn't cheap, isn't expensive. That's just for the acute

36  
1 type.  
2 Q And, to your knowledge, there was never  
3 any acute toxicity study done on any of the -- on any  
product  
4 that may have contained asbestos, is that correct?  
5 A I have no recollection.  
6 Q And there was never any Material Safety  
7 Data Sheet prepared for any product that contained  
asbestos  
8 that you recall?  
9 A Not that I recall.  
10 Q Do you believe that Koppers' research  
11 department kept itself aware of the various hazards  
of  
12 materials, kept itself current on knowledge of  
hazards of  
13 different raw materials that were being used?  
14 A The research department?  
15 Q Yes.  
16 A Yes.

**(Library)**

40

2 Q Did Koppers have a library of the  
3 research department?

4 A Yes.

**(ACGIH Publications)**

43

15 Q Do you recall whether there were old,  
16 already existing publications of the Industrial  
Hygiene

17 Foundation there at Verona?

18 A Yes, I believe there were.

19 Q And did you ever look through back issues  
20 of the ACGIH publications to determine in terms of  
research

21 what had been done on particular substances?

22 A That was one of the references that I  
23 used.

24 Q In addition to the chemical abstracts and

25 going back to the five-year summaries on that, you  
would also

44

1 look back in older issues of IHF abstracts, is that  
correct?

2 A Yes.

3 Q Do you remember ever doing that for  
4 asbestos?

5 A No. I believe I accepted the, you know,  
6 the information that was available at the time of, you  
know,

7 the preparation of the data sheet.

8 Q The material from the chemical abstracts,  
9 the current chemical abstracts or the ACGIH?

10 A Well, they had a publication on the TLVs

11 and that contained, you know, information relative  
to the

12 hazards and the, in a sense, the background, toxicity  
data,

13 health hazard and that.

**(American Ceramic Society and Knowledge)**

54

22 Q And you see in 1933, Koppers was a  
23 corporate member of, actually, Koppers Research  
Corporation

24 was a corporate member of the American Ceramic  
Society; do

25 you agree?

55

1 A Yes.

3 Q I'm going to show you some pages, some  
4 references. Okay. Starting on a page that's titled  
Notes

5 and News, if you'll look, there's an abstract of an  
article

6 by W.E. Cooke, with an E, do you see that one from  
the

7 British Medical Journal from 1924?

8 A Yes.

9 Q And the subject matter of that particular  
10 abstract deals with what?

11 A Fibrosis of the lungs due to inhalation  
12 of asbestos dust.

13 Q And it cites three particular articles

14 dealing with asbestos and asbestosis from 1924 to  
1929, do

15 you see that?

16 A Yes.

56

8 Q And as a member, that was a publication  
9 available to them in 1933, correct?

11 A I would assume so.

12 Q And in that publication in 1933, it cites

13 articles on asbestos and asbestosis, correct?

14 A Correct.

15 Q If you'll go down that column, you'll

16 notice an article listed by an S.R. Gloyne; do you  
see that

17 one? It's about fourth from the bottom. Can you tell  
me

18 what the subject matter of those abstracts are?  
19 A Presence of asbestos fiber in lesions of  
20 asbestos workers.  
21 Q And it cites articles from Tubercle  
22 Magazine from 1929 to 1930, is that correct?  
23 A Correct.  
24 Q And both of those references are to  
25 asbestos and asbestosis, is that correct?

57  
1 A Correct.  
2 Q And those are in this same 1933 document  
3 publication to which Koppers was a member,  
correct?  
5 A Yes.  
6 Q And if you flip to the next page, if you  
7 look at the first citation, the first full citation, it  
8 references an abstract from an article by an A.C.  
Haddow,  
9 H-A-D-D-O-W, do you see that, from the British  
Medical  
10 Journal?  
11 A Okay. Yeah.  
12 Q What's the subject of that abstract?  
13 A Clinical aspects of pulmonary asbestosis.  
14 Q That's from 1929, correct?  
15 A Yes.  
16 Q And if you go to the next column, you see  
17 two articles by A.J. Lanza. The fourth one down in  
there is  
18 a citation to an article by K.M. Lynch and W.A.  
Smith,  
19 correct?  
20 A Correct.  
21 Q What's the subject?  
22 A Asbestos bodies in sputum and in lung.  
23 Q That's from the Journal of the American  
24 Medical Association in 1930?  
25 A Yes.

58  
1 Q And then do you see the next citation

2 right after that by S. McDonald?  
3 A Yes.  
4 Q And what's the subject matter of that  
5 one?  
6 A Histology of pulmonary asbestosis.  
7 Q And that's from the British Medical  
8 Journal in 1927, is that correct?  
9 A Correct.  
10 Q And if you go down to -- there's two  
11 citations from E.R. Merewether, do you see those?  
12 A Yes.  
13 Q And the abstracts from the article is by  
14 E.R. Merewether, can you tell me what the subject  
matter of  
15 those are?  
16 A The first is occurrence of pulmonary  
17 fibrosis and other pulmonary affections in asbestos  
workers,  
18 is the first. The next report is report on effects of  
19 asbestos dust on the lungs and dust suppression in  
the  
20 asbestos industry.  
21 Q And those are both from 1930, correct?  
22 A Correct.  
23 Q And the first one was from a publication  
24 called the Journal of Industrial Hygiene?  
25 A Correct.

59  
1 Q And if you -- these are also in  
2 alphabetical order, if you go down, and T. Oliver, do  
you see  
3 that one?  
4 A Yes.  
5 Q Can you tell me what the subject matter  
6 of those abstracts are?  
7 A Pulmonary asbestosis, sociomedical study.  
8 Q And that appears to be from a German  
9 publication in 1930, is that correct?  
10 A Correct.  
11 Q And if I remember your testimony earlier,  
12 Koppers was actually begun by Heinrich Koppers in

Germany, is

13 that correct?

14 A Correct.

15 Q And there are also two other citations

16 from the British Medical Journal and the Journal of

17 Industrial Hygiene in 1930 in that abstract, is that correct?

18 A Correct.

19 Q If you go to the next page, and if you

20 look, there's an abstract by H.E. Seiler,

S-I-E-L-E-R, do you

21 see that one?

22 A Excuse me. Yes.

23 Q Can you tell me what the subject matter

24 of those two abstracts are?

25 A Case of pneumoconiosis: Result of

60

1 inhalation of asbestos dust.

2 Q Do you know what pneumoconiosis means?

3 A It's some dysfunction of the lung.

4 Q Due to dust disease? I'm just asking if

5 you personally recall from your work as an industrial

6 hygienist, that term.

7 A That seems right.

8 Q If you go on down, there's an abstract of

9 an article by a W.P. Soper, do you see that?

10 A Yes.

11 Q Can you tell me what the subject matter

12 of that abstract is?

13 A Pulmonary asbestosis: Report of a case

14 and a review.

15 Q And do you see there is one by M.J.

16 Stewart and A.C. Haddow, do you see that?

17 A Yes.

18 Q What is the subject matter of those

19 abstracts?

20 A Demonstration, the peculiar bodies of

21 pulmonary asbestosis and then in parenthesis, quote, asbestos

22 bodies, unquote, end of parenthesis, in material obtained by

23 lung puncture and in the sputum.

24 Q And you see that those are from

25 publications in 1928 and 1929?

61

1 A Correct.

2 Q And if you go over to the next column,

3 there are three abstracts in a row from W.B. Wood, can you

4 tell me the subject matter of those abstracts?

5 A The first, pulmonary asbestosis,

6 radiographic appearances in skiagrams of the chests of

7 workers in asbestos.

8 Q And you see the two following, it also is

9 regarding pulmonary asbestosis, is that correct?

10 A Correct.

11 Q Those three from W.B. Wood were published

12 in 1929 or 1930, is that correct?

13 A Correct.

14 Q All of the abstracts that you have just

15 looked at were all in a publication of a group to which

16 Koppers was a member, correct?

18 A As I said before, I assume so.

19 Q And you saw that Koppers was listed as a

20 corporate member in this publication?

21 A Correct.

22 Q So if this document is correct, that it's

23 a publication that was available to Koppers in 1933, and of a

24 group to which Koppers belonged, do you have any doubt that

25 Koppers had information available to it on asbestos as a

62

1 cause of disease?

4 Q In 1933?

5 A Assuming that someone read the bulletin,

6 yes.

7 Q But it was available to them, whether

8 they decided to read it or not, correct?  
 10 A Well, again, assuming they received the  
 11 journal.  
 12 Q But what I'm saying is: As a member,  
 13 this was available to them, whether they received it,  
 whether  
 14 they read it, whether they decided to line bird cages  
 with  
 15 it, it was something that was available, correct, in  
 1933?  
 17 Q Correct?  
 18 A Correct.  
 19 Q And the information in this that we just  
 20 talked about, all the different abstracts on asbestos  
 and  
 21 asbestosis, that was also available to Koppers as a  
 member of  
 22 the group in 1933, correct?  
 24 A It would have to be, yes.  
 25 Q The next thing I'd like to show you is a

63  
 1 membership roster from the bulletin of the American  
 Ceramic  
 2 Society from Volume 9, 1930 and I'm going to flip it  
 open to  
 3 the page, the particular page, where if you look at the  
 4 bottom, there's a reference to a Don C. Lynn, do you  
 see  
 5 that?  
 11 Q Go ahead.  
 12 A Yes, I see.  
 13 Q At that time Don Lynn was listed as  
 14 working for the Koppers laboratory at the Mellon  
 Institute,  
 15 correct?  
 16 A Correct.  
 17 Q We had talked earlier that Koppers had  
 18 their research facilities partly at the Mellon Institute  
 at  
 19 the time when you joined in 1948, correct?  
 20 A Correct.

24 Q I want to show you an excerpt from volume  
 25 9, 1930 of the Ceramic abstracts, page 479, and ask  
 you to

64  
 1 look at an abstract of an article from an M.J. Stewart.  
 If  
 2 you see, it's the second one highlighted. Do you see  
 that?  
 3 A Yes.  
 4 Q And what's the subject matter of that  
 5 abstract?  
 6 A Silicosis was formerly believed to be the  
 7 result of mechanical irritation by fine particles of  
 silica;  
 8 it now has been traced to the action of colloidal  
 silica.  
 9 Q Do you see after that there's an abstract  
 10 of asbestosis and silicosis, do you see that?  
 11 A Would you say that again?  
 14 Q Okay. Correct. And the title of that  
 15 abstract is what?  
 16 A Asbestos and silicosis.  
 17 Q And this was published in 1930, correct?  
 18 A Correct.  
 19 Q And the Koppers' research laboratory at  
 20 Mellon Institute had employees who were a member  
 of this  
 21 group at that time, correct?  
 23 A Apparently.  
 24 Q And as such, this information would have  
 25 been available to Koppers in 1930, is that correct?

65  
 2 A Apparently.  
 3 Q Rather than do this, I could go through  
 4 articles in great detail, but if I represent to you that  
 the  
 5 ceramic abstracts show that Koppers was a corporate  
 member  
 6 from 1933 until at least 1963, continuously, the  
 information

7 that was published in those particular publications  
are the  
8 bulletin and the abstracts contained information that  
was  
9 readily available to Koppers during that period,  
would you  
10 agree?  
12 A Apparently, yes.  
13 Q And if I represent to you, rather than  
14 pulling out every article and going through it in  
detail,  
15 that there were publications of articles in 1936, that  
16 referenced asbestosis in 1936 that information  
would have  
17 been available to Koppers as a member of this  
group, correct?  
19 A Apparently.  
20 Q And if I represent to you that there are  
21 articles in 1937, 1939, 1940, 1943, 1945, 46, 48,  
1950, 1951,  
22 1963, all referencing asbestos and asbestosis, all of  
the  
23 information during those years in those articles  
would have  
24 been available to Koppers as a corporate member of  
this group  
25 during those periods, correct?

66  
2 A Apparently.  
3 Q Now, do you have any doubt that Koppers  
4 readily had information available to it as a  
corporation and  
5 as a member of this group on the hazards of asbestos  
from  
6 1930 until 1963?  
7 A Apparently.

**(Warnings, Duty to Warn, Duty to Test)**

66  
8 Q And during the time that you worked at  
9 Koppers, do you recall any warnings going out either

from  
10 Koppers' research department internally to the  
divisions or  
11 from the divisions to the people who were  
purchasing products  
12 or working at the job sites where the engineering  
and  
13 contracting division worked about the hazards of  
asbestos?  
20 A I don't recall.  
21 Q You don't recall any such warnings going  
22 out?  
23 A No.  
24 Q During that entire period, information  
25 about the hazards of asbestos was readily available  
to

67  
1 Koppers, correct?  
3 A Apparently.  
4 Q Do you believe that Koppers had an  
5 obligation to warn purchasers of its product about  
any  
6 potential hazards associated with this product?  
8 A Yes.  
9 Q Do you believe that Koppers' engineering  
10 and contracting division had an obligation to warn  
employees  
11 of the plant owner where they were doing  
construction work  
12 about the hazards of any products that it was  
installing?  
14 A Well, I assume that would be a  
15 partnership obligation between Koppers and the  
plant.  
16 Q Who was in a better position to know what  
17 particular products were being installed, Koppers'  
18 engineering and construction division or the  
employer who  
19 owned the plant?  
21 A I would think 50-50.  
22 Q Are you aware whether or not the plant

23 owners ever purchased the materials or are you aware whether

24 that was Koppers' obligation as part of its contract?

25 A Well, I would assume that would be in the

68

13 Q Did Koppers' engineering and construction

14 division, do you believe they had an obligation to warn

15 bystanders of the hazards of the materials they were putting

16 in?

18 A The term bystanders would mean?

19 Q People who weren't working for Koppers

20 that were in the area.

21 A But were plant personnel?

22 Q Or working for other contractors.

23 A I would assume so.

24 Q You believe Koppers had an obligation to

25 warn those people of the hazards of any products that they

69

1 were using?

3 A Yes.

4 Q Assuming that the contracts, which we

5 have for Armco, and the accompanying notes, demonstrate that

6 asbestos products were used by Koppers and were purchased and

7 provided by Koppers and installed by Koppers at Armco, do you

8 believe they had an obligation to warn the Armco workers and

9 other contract workers of any hazards of any of the products

10 that they were using?

12 A Well, I'd assume it was still an equal,

13 you know, obligation on all the parts.

14 Q It was an obligation that fell, part of

15 the responsibility fell on Koppers, correct?

17 A Correct.

70

2 Q Do you know whether Koppers had any

3 procedure or policy in place to insure that they complied

4 with Workers' Compensation statutes regarding exposure levels

5 for asbestos?

6 A No, I have no way of knowing.

7 Q Have you ever seen any data or reports

8 from any of the divisions of any air sampling that was done

9 either by the engineering and contracting division or any of

10 the other product producing divisions of Koppers by those

11 divisions?

12 A I have no recollection.

13 Q As you sit here today, you have no

14 knowledge that they ever did any of that kind of air sampling?

16 A I'm not aware of it.

72

6 Q But certainly as a member, Koppers had

7 access to the abstracts that were being published by the

8 Industrial Hygiene Foundation, correct?

10 A Koppers, per se, I would believe so.

14 Q So as a company, Koppers would have had

15 available to it, while they were a member of the Industrial

16 Hygiene Foundation, the information on the hazards of

17 asbestos that were published in the abstracts in the 1940s,

18 correct?

20 A I would assume so.

21 Q So after going through the information

22 from the American Ceramic Society and talking about the

23 Industrial Hygiene Foundation, do you have any doubt that in

24 the 1940s, Koppers was aware of asbestos as a  
hazardous  
25 material?

73

1 A It would appear so.

2 Q It would appear so what?

3 A That they would have knowledge.

4 Q And based on your prior testimony, you

5 agree that Koppers had an obligation to inform  
people of the

6 potential hazards of products that Koppers produced  
that

7 contained asbestos in the 1940s or '50s or '60s,  
correct?

9 A Yes.

10 Q And also based on your testimony, you're

11 unaware of any warnings, of Koppers ever warning  
anyone about

12 hazards of products that Koppers sold that  
contained

13 asbestos, that Koppers used in their construction  
contracts

14 that contained asbestos, correct?

16 A There may have been something like that

17 on labeling. I don't honestly know.

18 Q Now, if the labeling documents that have

19 been produced to us on products that Koppers  
admits contained

20 asbestos in the '60s and '70s and even the '80s  
contained no

21 warnings that asbestos was a component part or that  
asbestos

22 was potentially hazardous, do you think that that  
was an

23 obligation of Koppers at that time to put such a  
warning on

24 those products?

74

1 A Depending on the concentration of the

2 asbestos in the material, yes.

3 Q Can you tell me what you mean by the

4 concentration of asbestos in the material?

5 A Well, whether the material was liquid,

6 solid, and the potential for the asbestos to depart  
from the

7 material it was in.

8 Q If Koppers was producing, let's say, a

9 mastic, kind of a liquid, quasi liquid material, do you  
know

10 what I'm talking about when I say mastic?

11 A Coating, like?

12 Q Correct. Let's assume that Koppers made

13 a mastic coating that contained asbestos fibers, do  
you

14 believe that Koppers had an obligation to at least  
test the

15 material to determine whether it would release  
fibers?

17 A I would assume so.

18 Q And if the testimony provided thus far by

19 people who worked in that particular division is that  
Koppers

20 never tested its mastics to determine whether fibers  
were

21 released, do you think that was an obligation that  
Koppers

22 has violated to the general public?

25 A Yeah.

75

1 Q So at least at minimum, Koppers should

2 have tested the product to determine whether it could  
release

3 fibers, correct?

5 A I assume so, yeah.

6 Q And if Koppers failed to do that, you

7 believe that they failed to do what, at bare minimum,  
they

8 should have done as an asbestos product  
manufacturer,

9 correct?

11 A I would assume so.

12 Q If Koppers made an insulation board for  
13 roofing that contained asbestos, do you believe that  
that

14 board had a higher potential to release fibers than a  
roofing

15 mastic?

16 A What kind of a board again?

17 Q A roofing insulation board.

18 A I would think so, yes.

19 Q And do you believe that Koppers had an  
20 obligation to test those products to determine  
whether or not

21 they would release fibers?

23 A It would depend on the condition of use.

24 Q At bare minimum, Koppers, do you believe

25 Koppers should have at least tested their products to

76

1 determine in its use it could have the potential to  
release

2 asbestos fibers?

3 A Probably should have.

5 Q Now, as far as the engineering and

6 construction division goes, if they were using, let's  
say, a

7 dry cement that contained asbestos and they were  
mixing it

8 out in the open where other people, either their own  
workers

9 or other workers could be exposed to it, do you  
believe they

10 had an obligation to warn people of that potential  
exposure?

14 A Well, the potential for that situation

15 for asbestos exposure doesn't seem very great, but it  
16 probably wouldn't have hurt.

17 Q Have you ever seen cement mixed, not just

18 asbestos, but just cement?

19 A Other than on a home site, no.

20 Q Have you seen it mixed at a home site?

21 A Yeah.

22 Q Have you seen the bag actually opened and  
23 dumped into a trough or something and mixed with  
water?

24 A Yes.

25 Q The process of opening the bag and

77

1 dumping it into a trough, does that create dust?

2 A Yes.

3 Q If asbestos cements or castables are

4 similar in the release of dust, do you believe that  
there is

5 a higher potential of exposure to asbestos from that  
than,

6 say, a roofing material?

7 A Yes.

8 Q Do you believe that if Koppers knew that

9 it was using an asbestos-containing cement in that  
kind of

10 format, they had an obligation to warn the people  
around them

11 that there was a potential for exposure?

13 A Yes.

14 Q If Koppers did not warn individuals in

15 the area where they were doing construction work  
that they

16 were using asbestos products like cements or pipe  
insulation

17 or block insulation or asbestos ropes, that they were  
using

18 asbestos products, do you think that they or do you  
believe

19 that Koppers violated an obligation that it had to  
people

20 that were working for them or around them?

22 A While the potential doesn't seem very

23 high, probably should have.

78

5 Q Do you think that the Koppers'

6 engineering and construction division had, at

minimum, an

7 obligation to do air sampling to determine whether  
the levels

8 were being met or exceeded?

10 A It would have been helpful, yes.

11 Q They had the capabilities of doing it,  
12 didn't they?

13 A I'm not aware that they did or didn't.

14 Q Koppers had at least one industrial

15 hygienist in their employ, correct?

16 A Correct.

17 Q So at minimum, your presence could have

18 been requested to do air sampling, correct?

19 A Yes.

***William Ice Greco v. A-Best, et al.*** March 27, 1998,  
Feb. 11, 1999

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**William Ice Greco v. A-Best, et al.** March 27, 1998,  
Feb. 11, 1999

**(Background)**

17

12 Q Okay. Now, let's talk about your  
13 work history. I'd like to go through just an outline  
14 of jobs you've held and companies you've worked  
for,

15 and then we'll focus in on probably Koppers. After  
16 college, what was your first job?

17 A Koppers' Engineering Construction  
18 Division.

19 Q When did you start with Koppers?

20 A 1952.

21 Q Okay. And have you worked for  
22 anyone else besides Koppers?

23 A Yes.

24 Q Who else?

25 A I worked for -- it was at the time

18 L. 1-15, 24-25

1 known as Raymond Kaiser Engineers, 1984 to '86.

2 Q Okay. Is that the company that is  
3 now known as ICF Kaiser?

4 A Yes.

5 Q Okay. And after that, what was  
6 your next job?

7 A Keystone Environmental Resources.

8 Q And when were you employed there?

9 A 1987 -- I'll give you an answer

10 like this: Through '91, although they were  
purchased

11 and the name changed, but it -- it was still the same  
12 group.

13 Q Okay. And they were purchased by  
14 whom?

15 A Chester Engineers.

24 Q Okay. And after '91, did you have  
25 any other employment after that?

19

1 A I actually worked another year

2 after retirement from Chester as a consultant to  
3 Chester, and I completed that in '92. And since that  
4 time, I have been self-employed.

5 Q And what is the nature of your  
6 self-employment?

7 A Consulting in coke plant  
8 operations.

20

2 Q Okay. And can you tell me some  
3 about consulting with Beazer?

4 A Generally it had to do with  
5 litigation.

**(Corporate History)**

76

20 Q Okay. Now I want to go over your  
21 understanding of the history of the Koppers  
Company, if

22 you can kind of outline what you recall from your  
23 tenure at Koppers, the history and evolution of  
24 Koppers.

25 A Koppers, to my knowledge, started

77

1 as Koppers Construction Company in 1907, built a  
2 battery in Joliet, Illinois.

3 Q Okay.

4 A Was nationalized during First World  
5 War and became an American corporation.

78

13 Q Is your understanding of the  
14 Koppers business and in the beginning as Koppers  
15 Construction -- their predominant business was the  
16 construction of coke oven batteries, and did it  
evolve

17 later into the offshoots of coke ovens and coal tar  
and

18 the associated products that flow from there?

19 A That's correct.

**(Engineering & Construction Sales)**

82

4 Q Okay. Now, in the E and C

5 Division, can you tell me how the marketing or sales  
6 end of that worked? Was it something that there was  
an

7 organized effort to go out and contact steel facilities

8 and say, "We have the expertise to build this kind of  
a

9 facility or to repair this kind of facility" and kind

10 of solicit new contracts that way?

11 A Yes.

12 Q Okay. It wasn't one where you

13 could just sit back in Pittsburgh and people would  
be

14 calling you all the time saying, "You're the only one  
15 in the country that can do this. Please do it for me"?

16 A That is -- that is a correct

17 assessment. You didn't sit and wait for orders.

18 Q Okay. Was the business of the E

19 and C Division highly competitive?

20 A Yes.

**(Use of Asbestos in construction)**

179

11 Q Okay. When Koppers' E and C would

12 go out to start up a contract, is it fair to say that

13 the trade men were hired from local union halls?

14 A Yes.

15 Q Okay. And can you tell me what --

16 let's say on the construction of a new coke battery,

17 what trades would be involved?

18 A Laborers, carpenters, cement

19 finishers, bricklayers, iron workers, millwrights,

20 pipefitters, sometimes boiler makers, electricians.

21 Those are the main crafts that would be utilized.

180

1 Q Okay. Insulators?

2 A To the best of my knowledge, that

3 was always sublet.

4 Q Okay.

5 A I'm not saying that's always true,

6 but that was a general policy to sublet insulation.

7 Q By sublet, you mean subcontract?

8 A Subcontract, yes.

191

3 Q Okay. If there was something

4 called rope that was used to caulk door jams, can you

5 tell me what kind of product that would be in 1960?

6 A 1960 -- that would be asbestos

7 rope.

8 Q Okay. Can you describe for me what

9 asbestos rope is?

10 A It's just fibrous asbestos that is,

11 if you will, manufactured and wound into a -- into a

12 rope-looking form.

13 Q Okay. And do you know what the

14 purpose of a rope would be in caulking a door jam?

15 A The purpose is to fill a void with

16 a material that can allow for expansion or give.

17 Q Okay. If there's a note on

18 insulating steam piping, what kind of insulation  
would

19 be used on steam piping in conjunction with a  
project

20 such as where they're building or repairing a coke  
oven

21 battery?

22 A That could vary.

23 Q Okay.

24 A That could be a number -- a number

25 of materials. Could be calcium silicate.

192

1 Q Okay. What about a magnesium base?

2 A Could be magnesium-based.

3 Q Okay. Would this be a preformed

4 product?

5 A Normally, yes.

6 Q Okay. Now, if we're talking -- if

7 we're talking about steam piping, what would be the

8 typical diameter of steam piping that we'd be talking

9 about? Would it be as large as the exit piping that we  
10 talked as 60-inch or --

11 A No.

12 Q Okay. What size are we talking  
13 about?

14 A It can vary from half-inch to

15 six-inch. Could be greater, but in the areas you're  
16 talking about, that covers it.

195

14 We don't have the original oversize to be able to  
look

15 at more detail. If you'll notice also on that drawing,  
16 below that there are indications of the placement of  
17 both asbestos rope and asbestos paper?

18 A Yes.

196

7 Q Okay. And what would be the  
8 purpose of putting asbestos paper there on the sides  
9 and top of the crossover?

10 A To allow for a slip joint for  
11 expansion during the heat-up.

12 Q Okay. Going back to the issue of  
13 insulation, if it's a poured material, would that be a  
14 dry material poured to fill a void, or would it be a  
15 poured wet mixture?

16 A That would be a poured wet mixture.

17 Q If it was a poured wet mixture, is  
18 there another name for that that would be used? If I  
19 were to talk to a manufacturer, would it be called a  
--

20 A They would be using an insulating  
21 concrete.

22 Q Or an insulating cement? Would  
23 that be the same thing?

24 A Could be, depending on how they use  
25 the terms.

198

7 Q Okay. Would there be -- when we  
8 were talking about blanks earlier, if there are

9 something called asbestos blanks in venting stand  
10 pipes, what kind of product would that be?

11 A It -- it would be an

12 asbestos-containing sheet of material.

25 Q Okay. Earlier, you talked about

199

1 blanks.

2 A Yes.

3 Q Do you remember?

4 A Yes.

5 Q And describe for me again what a  
6 blank is.

7 A Blank is a -- a piece of material

8 installed to produce a mechanical separation between  
9 two areas in a system.

10 Q Okay. And if I recall your

11 testimony earlier, did you say that the blank  
combined

12 a piece of metal and a piece of board-like material?

13 A That's what we read in the item

14 that we were looking at.

202

24 Q Was, in your experience, asbestos

25 paper ever used in conjunction with silica bricks to

203

1 create expansion joints in the process of building the  
2 refractory part of the coke oven?

3 A Yes.

4 Q Okay. Would that be inside the  
5 furnace itself?

6 A It would be inside the oven  
7 structure, yes.

8 Q The oven. I'm sorry. Oven, okay.

9 Was that a common practice to use asbestos paper for  
10 expansion joints?

11 A Yes.

12 Q Okay. Was there ever a time in

13 your experience with working with coke oven

14 construction projects that Koppers ever

discontinued

15 the use of asbestos rope in coke jobs?

16 A Yes.

17 Q When was that?

18 A During the '70s.

211

25 Q Okay. How about Owens-Corning?

212

1 A Yes.

10 Q How about a product called

11 Unibestos?

12 A I've heard the term.

13 Q Okay. And with what do you

14 associate the name Unibestos?

15 A The obvious assumption is that it

16 contains asbestos, but I don't associate it with

17 anything else.

213

1 Q Okay. Okay. Have you ever heard

2 of a company called Philip Carey?

3 A Yes.

214

2 Q Okay. I want to show you a

3 photocopy of a photograph of a package of Grefco

4 insulating cement and see if that in any way refreshes

5 your recollection.

6 A I've probably seen that before.

7 Q Okay. And how would a product like

8 that be used, if you recall?

11 A I mean, it -- it would be used the

12 same as, you know, any of their competitors'  
insulating

13 cements and stuff.

14 Q Okay.

15 A I don't know that there's anything

16 different about it.

17 Q How would it -- okay. Going from

18 the specific to the general, how would insulating

19 cement be used?

20 A It can be used several ways. It

21 can be used in conjunction with other materials to  
form

22 an insulating concrete. It can be -- I -- you know,

23 I --

217

14 Q How about Kast-O-Lite?

15 A I've heard of that, but I don't --

16 can't really tell you anything about it.

23 Q How about Mizzou?

24 A Mizzou? That has a certain

25 familiarity to it, but I can't be sure.

219

25 Q How about Flexitallic?

220

1 A Yes.

2 Q What can you tell me about

3 Flexitallic?

4 A That was a -- a product that

5 employed steel in the making of gaskets as I recall.

6 Q Okay. And where would those

7 gaskets be used, if at all, in the, say, construction

8 of a coke oven?

9 A I'm not sure about the delineation

10 between Flexitallic and Spirotallic, but one or the

11 other or both was used as gaskets in high pressure

12 steam lines.

13 Q Okay. Do you know whether they

14 would also be used in conjunction with the  
construction

15 of a BOF?

16 A I don't know that they specifically

17 were, but they certainly could be.

18 Q Okay. What about Concast?

19 Continuous Caster?

20 A I've heard of Concast, yes.

21 Q I'm sorry. We talked earlier about

22 a Continuous Caster. Let me start again. Would a

23 Flexitallic product be used in conjunction with a  
24 Continuous Caster?  
25 A Could be.

**(Steel Mill Piping and Asbestos Products Feb. 11, 1999)**

37

21 Q I want to talk a little bit about piping  
22 insulation itself. Can you tell me the types of  
piping that  
23 would be involved in a coke battery?  
24 A By "type," do you mean usage?  
25 Q Correct.

38

1 A Gas piping, steam piping, air piping,  
2 sometimes nitrogen piping, instrument piping,  
underground  
3 piping would be in the nature of sewer and drainage  
piping,  
4 hydraulic piping, tar piping, liquor piping, light oil  
5 piping. I probably should just lump those without  
getting  
6 much more lengthy in process piping. Those are the  
majority  
7 of them, I think. We were talking coke ovens?  
8 Q Yes.  
9 A Yes, I think that's -- I think that's  
10 most of them. Yes, I said natural gas. That covers  
various  
11 kinds of gases. That's most of them, I think.  
12 Q Okay. Now let's talk about the  
13 by-products area. Were the types of piping that you  
just  
14 mentioned also including the by-products area or  
are there  
15 additional types of piping that would be somewhat  
unique to  
16 the by-products area?  
17 A I believe the types we've covered would  
18 occur in the by-products as well as the battery area.  
19 Q Is there anything that would be only in

20 the by-product area that wouldn't be in the battery  
area?

21 A Tar piping and light oil piping.

22 There's another one for the by-product area that  
23 would be specific there, acid piping.

24 Q Now let me ask about blast furnace. Can  
25 you tell me what kinds of piping --

39

1 A Before you go further --

2 Q Okay.

3 A As I said in the earlier portion of my  
4 deposition, blast furnace was one area that I never  
worked in

5 as an operator. I never started one as a manager. I  
only

6 managed a part of one engineering contract. So, I  
don't

7 really have a good knowledge of blast furnaces. I  
can tell

8 you a few things in general. There was naturally  
blast

9 furnace gas piping, hot blast piping, cold blast  
piping.

10 Those were the main ones I'm aware of in addition  
to

11 utilities.

12 Q Steam lines?

13 A Certainly there would be steam lines.

14 Q Okay. And utilities, would that be --

15 A Water, air.

16 Q Would there be natural gas?

17 A In some instances, yes, some furnaces  
18 used natural gas injection.

19 Q Would there be instrument piping?

20 A Yes.

21 Q And the underground sewer drainage  
22 piping?

23 A Yes.

24 Q Hydraulic?

25 A Sometimes, yes. Generally, yes, because

40

1 there was hydraulic equipment.

2 Q There wouldn't be tar piping; would  
3 there?

4 A Generally not.

5 Q And what about liquor and light oil?

6 A No.

7 Q What about open hearths?

8 A I never managed an open hearth job nor  
9 did I start one up. I would only have external  
knowledge

10 there. The one that's obvious, most of them used  
oxygen

11 injection. So, you would add oxygen piping.

12 Q Would it have most of the same piping  
13 that you would see in a blast furnace?

14 A Some of it wouldn't have -- it wouldn't  
15 have hot and cold blast, of course.

16 Q It would have the utilities; right?

17 A Yes, and instrumentation and underground  
18 drainage, those sorts; have some steam.

19 Q Can you tell me what were some of the  
20 uses for steam in a coke battery?

21 A Steam was used for aspirating the ovens  
22 during the charging procedure.

23 Q Can you define aspirating a little bit as  
24 to what does that really mean?

25 A It provides a suction on the oven during

41

1 the charging process to draw off the volatile matters  
and

2 force them into the collecting main until such time  
as the

3 oven would be placed in service on the main.

4 Q I'm trying to see if I understand what  
5 you're talking about. In aspirating, would the steam  
be used

6 to create some kind of a vacuum to draw out the  
waste gases?

7 A Yes, temporarily during the charging  
8 process.

9 Q What are some of the other uses for steam  
10 in a coke battery?

11 A For providing heat in certain areas, both  
12 processes; for instance, heating gas and heat  
exchanger,

13 freeze protection.

14 Q Stop there for just one second. We were  
15 talking about freeze protection, just to keep  
16 some of the utility pipes from freezing in the  
winter?

17 A Yes.

18 Q Okay. Go ahead.

19 A Sometimes as a source of motive power;  
20 for instance, to turn turbine-type drivers, to be a  
source of

21 purge material for safety.

22 Q Can you break that down a little bit for  
23 me?

24 A If a gas line needed to be taken out of  
25 service, steam would be injected at one end and the  
material

42

1 vented at the opposite end so as to clear it of gas and  
make

2 it safe.

3 Q So, if I understand correctly, that would

4 be used to displace the gas so that when someone  
started

5 working on the pipe it wouldn't be an explosion  
risk?

6 A That's correct.

7 Q Any other uses as a purge material?

8 A Sometimes used as a median to -- if it  
9 were to clear lines of obstructions both to provide a  
force

10 to propel materials from the line as well as to heat  
it.

11 Example: Plugged tar line; warm the tar, push it  
out.

12 Q So, if the tar had gone from liquid to a

13 semi-solid state you would need to warm it up to

make it flow

14 and blow it out?

15 A Correct.

16 Q Were the tar lines normally heated?

17 A Some tar lines may be heated. They were

18 generally insulated whether they were heated or not.

19 Q Insulated to make sure the heat is

20 retained so that it maintains its liquid or semi-liquid

21 state?

22 A Yes.

23 Q Okay. You were going over the different

24 uses of steam in a coke battery. Can you think of any

25 others?

43

1 A Not offhand.

2 Q You had mentioned steam as a source of

3 motive power to turn turbine-type drivers. Can you tell me

4 some of the steam-driven or motivated machinery that you can

5 think about in a battery?

6 A Yes; an auxiliary emergency source of

7 power to turn over the reversing mechanism in case of a power

8 failure. Generally speaking, these are drives that were

9 provided to accommodate power failures, electrical power

10 failures. There would be generally steam and/or air-driven

11 motors to drive a pusher ram and a leveler bar on the oven

12 machinery. Those are the main ones around the battery.

13 When you get into the by-product, that's

14 a different list.

15 Q Were there steam-driven air compressors

16 to provide the air for the air lines?

17 A Generally those were electrically driven.

18 It's not inconceivable to have a turbine-driven, but

19 generally they were electrical.

20 Q Okay. Were there turbines that served as

21 kind of a fan function that were driven by steam to move air

22 or gas around?

23 A Not generally at the battery.

24 Q Do you recall whether batteries in

25 general would have turbines that would generate their own

44

1 power or was that part of a substation?

2 A That would be part of a separate

3 plant-wide facility normally.

4 Q Okay. Now let's move into the

5 by-products area. Can you tell me some of the other -- well,

6 let me start -- first of all, the list that you just gave me

7 of the different functions of steam in a coke battery, would

8 they also be used in the by-products area with the exception

9 of aspirating the ovens?

10 A Yes, they would and -- yes, I believe the

11 ones I've given you would be.

12 Q In addition to those, are there other

13 functions of steam in a by-products area that are kind of

14 unique to the by-products area or that you wouldn't see in

15 the coke oven battery?

16 A Normally you wouldn't have turbine-driven

17 pumps on the battery, but you normally would have some in the

18 by-products. On the battery you would have turbine-driven

19 gas pumping equipment. You would also have heaters that

20 would utilize steam to heat process liquids. You

would have  
21 steam that would be used in reboilers or heating  
coils and  
22 stills.  
23 Q Okay. Let me stop for a second. On the  
24 stills, what is a still in conjunction with the  
by-products  
25 area?

45  
1 A A still is a vessel that normally has  
2 trays and a liquid is introduced at the top and sweep  
steam  
3 at the bottom to strip whatever the material might be  
from  
4 the feed material.  
5 Q Would it be -- I'm trying to think of it  
6 in terms of something else. Would it be used to  
distill or  
7 break apart the different components of the material  
that's  
8 coming in so that they can be separated into their,  
you know,  
9 different useful functions?  
10 A Yes.  
11 Q So, in addition to the ones that you've  
12 talked about, the turbines for the gas pump, the  
heaters for  
13 the liquid process, the reboilers and the coils and  
the still  
14 and the turbine pumps, can you think of other uses  
for steam  
15 in the by-products area?  
16 A About the only other one thing that's  
17 common to all areas in a plant is for use of space  
heating  
18 buildings, control rooms, that sort of thing.  
19 Q Now, let me ask you the same kind of  
20 questions about the blast furnace. Can you tell me  
some of  
21 the uses that you're aware of of steam in a blast  
furnace?

22 A Normally the blowers are turbo blowers,  
23 they're steam-driven, and they would have many of  
the other  
24 common uses, freeze protection for utilities, steam  
for  
25 purging.

46  
1 Q So, it would also be a source of motive  
2 power for some of the turbine-type drivers?  
3 A Yes, that's why I mentioned --  
4 Q Particularly the blowers?  
5 A Blowers, yes.  
6 Q Would there be some other machinery such  
7 as the turbine pumps that you mentioned in the  
by-products  
8 area?  
9 A There could be.  
10 Q Would it also be used as a backup to move  
11 some machinery for electrical interruptions?  
12 A Possibly on pumps, and I'm not certain of  
13 others. The problem we have here, you know, is  
we're  
14 generalizing. Some plants would have things other  
plants  
15 wouldn't.  
16 Q Now, I know you don't have that much  
17 experience in the open hearths, but would there be  
some of  
18 the same common functions of steam in an open  
hearth for the  
19 heating of the pipes and freeze protection?  
20 A Yes.  
21 Q Can you think of any unique function to  
22 the open hearth that steam would have?  
23 A Not offhand.

47  
7 Q Okay. It sounds from all the different  
8 functions of steam in the batteries and by-products  
area that

9 the battery and by-products area would seem to have quite a

10 volume of steam lines; is that correct?

11 A Yes.

12 Q And would these steam lines be out --

13 they would be outside the ovens and outside of the machinery

14 in the by-products area, the stills and the tanks?

15 A Yes.

16 Q Okay. Would they have to be insulated to

17 maintain their heat and to protect people from getting

18 burned?

19 A Yes.

20 Q Were there other kinds of lines that

21 would be insulated with a similar material as you recall

22 being used on steam lines in a battery?

23 A Similar but not -- the specifications

24 would vary because the temperature range is different.

25 Q In your last deposition we talked about a

48

1 couple of types of insulation you recalled, a calcium  
2 silicate insulation --

3 A Yes.

4 Q -- and you recalled a magnesium-based  
5 pipe insulation.

6 A Yes.

7 Q And I'll limit myself to pipe insulation

8 so we're talking about the same thing. Can you tell  
me other

9 kinds of piping or lines in a coke battery that would  
use

10 either the calcium silicate or the magnesium-type  
insulation?

11 A Some of the coke oven fuel gas piping

12 would have used the calcium silicate over a period  
of time.

13 Any of the lines that were traced and insulated  
during

14 certain historical periods would have utilized that  
material.

15 Q Okay. Let's, if we can, define that a

16 little bit more. When you say "certain historic  
periods,"

17 can you give me an idea of the time frame you're  
talking

18 about? You started in 1952. Would it have been  
going on

19 then?

20 A Probably not. What I'm really referring

21 to is that for lower temperature applications in later  
years

22 fiberglass may have been used.

23 Q In the earlier years would the traced

24 lines, the ones that were steam traced, would those  
be

25 insulated?

49

1 A Yes.

2 Q And what kind of material in the earlier

3 years would have been used on the traced lines?

4 A The earlier years it would have probably  
5 been -- and I don't recall trade names and so forth,  
but it

6 would have been asbestos.

8 A It would have been block asbestos,

9 preformed probably.

10 Q When you're talking about the preformed

11 block asbestos to use on these lines, the traced  
lines, is

12 that a different material than the calcium silicate or  
13 magnesium-based material?

14 A Yes.

15 Q Can you describe for me what this

16 preformed block looked like or is there another  
designation

17 you can give it other than an asbestos block?

18 A Normally two halves of it put together,

19 had an opening in the middle and it had an ID and  
an OD. I

20 don't know how else to describe it. It came in lengths.

21 Q Well, that sounds similar also to the

22 general description of a calcium silicate or an 85 percent

23 magnesium pipe insulation. Is it?

24 A In physical dimensions it would be

25 similar.

50

4 Q Okay. Going back to this preformed block

5 insulation, in coloring can you tell me what the general

6 color would be when it's new?

7 A It's rather white.

8 Q And does it generally come in a

9 three-foot length?

10 A It probably came in varying lengths.

11 I'm not certain. In the range of three to four feet usually.

12 Q Was it harder than the calcium silicate

13 or was it softer, if you know what I'm -- the texture

14 difference?

15 A It had a softer texture.

16 Q And other than asbestos block, is there

17 any other kind of designation or name that comes to mind when

18 you try to describe it so we have something more than a

19 general block?

20 A I don't think of a name.

21 Q When you were working on a job as a

22 contract manager or when you were out on the site working as

23 part of the start-up crew, would you know the type of pipe

24 insulation that was being used on the different pipelines?

25 A I might not always know, but I can

51

1 always check and see what it should be.

2 Q Can you recall whether there's a visual

3 difference between the calcium silicate and the

4 magnesium-based pipe insulation?

5 A I don't recall.

6 Q Did you ever see a -- kind of a pipe

7 insulation that wasn't the white or gray but was more of a

8 tan or a brown that was particularly hard?

9 A I've seen it. I don't recall what it

10 was.

19 Q Now, going back to the different kinds of

20 lines that would have been insulated with either -- now, we

21 have a magnesium-based, we have the calcium silicate and the

22 white asbestos block that you mentioned and this brown

23 material. Talking about those materials, can you think of

24 any other kinds of lines where those kinds of materials were

25 used?

52

1 A Other than the list of pipes that we've

2 already talked about that were covered?

3 Q Well, you mentioned thus far steam, coke,

4 fuel gas and the traced lines that were steam traced. Were

5 there other kinds of lines that were insulated with these

6 same kinds of materials?

7 A Yes, tar lines in the by-product, wash

8 oil lines in the light oil plant. There could be others

9 depending on whether the plant had additional facilities that

10 weren't always provided with a coke plant. For instance, the

11 desulfurization plant would have their solution lines

12 insulated with some of these materials. Light oil

lines

13 themselves as opposed to wash oil would have insulation on

14 some of the lines.

15 Q And when you're talking about the

16 insulation, we're still focusing on these --

17 A Those types.

18 Q -- that we talked about? Okay. Can you think of any others?

20 A Not offhand.

21 Q Are you familiar with a product called

22 block insulation or kind of a flat, lightweight sheet?

23 A Yes, magnesium block.

24 Q Can you tell me some of the uses for

25 block insulation in a coke battery?

53

1 A A coke battery?

3 A None come to mind quickly at the battery

4 itself. The only one that comes to mind quickly is I've seen

5 them used on heat shields for bulkheads.

6 Q Okay.

7 A Normally those would either be -- more

8 often those were used by the client when he was doing

9 patching or on repair work.

10 Q Okay. And can you tell me which

11 bulkheads you're talking about?

12 A These would be temporary bulkheads that

13 would be set in the ends of the ovens to do two things; to

14 keep the ovens from losing their heat and to protect people

15 who were doing patching work.

16 Q Okay. Now, let me ask this kind of basic

17 question about the ovens themselves, the battery: At the

18 ends of the sequence of ovens was there some kind of a wall

19 to keep the heat in?

20 A Yes.

21 Q Was that a permanent wall?

22 A Oh, yes.

23 Q Now, when you're talking about the

24 bulkheads, would that be where they would be removing the

25 walls so that they could do the patching work?

54

1 A They would be removing a door from an oven.

3 Q Oh, okay. So, this would be like a temporary replacement for a door while they worked on a door?

5 A Or get the door out of the way so the man had access to the end of the oven.

7 Q Okay. And my problem, when I'm thinking ends I'm thinking about the small end of the sides of the

9 oven, but there's also the openings on both sides where the

10 material has to go through.

11 A Push the coke out.

12 Q When you're talking about that, you're

13 talking about like the coke side and the pusher side ends,

14 not the ends of the whole sequence of the battery?

15 A Right.

16 Q Okay. Can you think of any uses for block insulation in the by-products area?

18 A Yes. It would be used to insulate stills; it would be used to insulate heated areas of other

20 by-product vessels; it would be used to insulate certain of

21 the holding tanks, tar collecting tanks for instance. Those

22 are probably the big major users.

23 Q Can you tell me any uses of block

24 insulation that come to mind in a blast furnace?

25 A The hot blast main, for instance, was so

55

1 large you would have to use block insulation to cover it.

2 They didn't make pipe insulation with a sufficient idea of

3 raised curvature, and around the stoves they would use --

4 there would be areas where block insulation would be used.

5 Q In the blast furnace itself, is there a

6 backup lining on the outside of the refractory brick itself?

7 A Yes. Well, both are refractory but there

8 is what is called a permanent lining and a working lining.

9 Q Is there a lining that's against the

10 exterior shell of the vessel?

11 A Yes.

12 Q Do you know if block insulation is used

13 or do you recall block insulation being used in that area

14 against the shell?

15 A I don't know.

20 Q Okay. Now, in your last deposition we

21 talked about a material that you called an insulating  
22 concrete or I called it an insulating cement. Do you  
23 know

23 what I'm talking about?

24 A Yes.

25 Q Okay. Now I want to go through kind of

56

1 the same sort of things. In the coke oven battery  
itself,

2 can you tell me any uses for the insulating cement in  
the

3 battery?

4 A In some batteries insulating concrete was

5 used in the top of the ovens below the paving brick.  
That

6 was not done in the older batteries.

7 Q By not in the older batteries, can you

8 give me an idea of when this began to be done that  
you

9 recall?

10 A I'm really not certain. I think that

11 this probably began to be done somewhere in the  
'60s, but I

12 couldn't be certain.

57

13 Q Okay. Now, going back to the uses of the

14 insulating concrete in the coke battery, can you  
give me some

15 other ideas of where it would be used other than the  
top of

16 the oven under the paving brick?

17 A It could be used to seal the bases of the

18 stand pipes, the ascension pipes, sometimes used to  
point up

19 the joints between the regenerator walls and the  
regenerator

20 bulkhead. Some designs used material at what is  
called the

21 cold joint of the ascension pipe elbow. Those are  
the main

22 uses that I can recall.

23 Q The last use kind of brought something to

24 mind. On some of the lines that you talked about  
before that

25 would have been insulated with the types of  
insulation we're

58

1 talking about, the calcium silicate, the magnesium  
and the

2 asbestos block, when they came to an elbow, was  
there a

3 material used to cover the elbow since in the older  
days they

4 didn't have preformed elbows?

5 A Yes.

6 Q What would that material be?  
7 A I'm sure it varied. In general I can say  
8 that it was made up to a putty-like consistency and  
9 trowelled  
10 on. Composition varied and I really can't recall what  
the  
11 various ones were.

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16 Q Now, let's talk about the by-products  
17 area. Can you tell me some of the uses for  
insulating  
18 concrete in the by-products area?  
19 A Other than used to fill irregular areas  
20 that were being insulated with some form of block  
or pipe  
21 covering, I don't think of any unique application  
such as we  
22 had on the battery.

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opposed to

2 the door end to the other longitudinal end?

3 A Yes.

4 Q And if we're talking about 40 ovens, how

5 long would that structure of the ovens be, approximately? I

6 know it's going to vary by design.

7 A Yes. 40 ovens -- well, the battery

8 itself would be in the range of about 140 feet for 40 ovens.

9 Q And this slip joint that we're talking

10 about, would it be 140 feet long?

11 A Yes.

12 Q And about three feet wide?

13 A No, the joint wouldn't be wide.

14 Q Oh, okay. That's right, it's vertical.

15 A No, the joint would be small.

62

1 Q Have you ever seen asbestos cloth used?

5 A I have seen asbestos cloth.

6 Q Have you ever seen it used in a steel

7 mill?

8 A Yes.

9 Q Have you ever seen it -- can you tell me

10 whether you can recall any uses of asbestos cloth in

11 a battery, a coke oven battery?

12 A I can't recall any being used in

13 permanent construction.

14 Q Can you recall -- when you say

15 "permanent," that leads me to believe that something less

16 permanent it may have been used in.

17 A I seem to recall that for a temporary

18 protection until permanent material could be installed they

19 might wrap it with asbestos cloth.

24 Q Would it be fair to say that without

25 going into great detail there would be gaskets used in a lot

63

1 of the piping in a coke oven battery?

2 A Yes.

3 Q And would there be gaskets used in a lot

4 of the piping in the by-products area?

5 A Yes.

6 Q And the last time you recalled the name

7 Flexitallic when I asked you. Is that name familiar to you?

8 A Yes.

9 Q Can you tell me what kind of lines the

10 Flexitallic gaskets would be used in?

11 A High temperature/high-pressure lines such

12 as steam; and as far as the coke plant itself, steam lines I

13 think was the main user of Flexitallic.

14 Q What about by-products, would that be the

15 same or would it also be used in some of the other processes?

16 A Generally speaking steam could be used in

17 a few hot wash oil applications.

18 Q Flexitallic gasket was a metal gasket;

19 right?

20 A It was a composite. Metal was the thing

21 that gave it the strength.

22 Q Okay. Were there gaskets that were made

23 in a flexible sheet that was something like either a rubber

24 or something similar to that?

25 A Yes.

64

1 Q Have you ever heard of the name Garlock?

2 A Yes.

3 Q Are you familiar with Garlock gaskets?

4 A Garlock made a whole range of gaskets. We

5 used many of them.

8 Q Would the Garlock gaskets be used in most

9 of the piping that you described or was there some kind of an

10 exclusive use to them like the Flexitallic gaskets

which were

11 essentially high pressure/high temperature?

12 A The various stock numbers of Garlock

13 were put to general use.

23 Q Okay. Have you ever seen a spray

24 material like a gunnite?

25 A Yes.

65

1 Q Have you ever seen that used in a coke

2 oven battery?

3 A Yes.

4 Q Can you tell me what areas of a coke oven

5 battery you would see gunnite used?

6 A The most prevalent use is to patch the

7 jam cleavage joint in the ovens themselves; can be used for

8 spray patching of spalled brick areas within the coke ovens

9 themselves.

10 Q Okay. This jam cleavage area, would that

11 ever get over 2,000 degrees in the normal function of a coke

12 oven battery?

13 A The so-called hot side of the joint

14 could.

15 Q And which side would the gunnite be used

16 on, either side?

17 A It's used on the cleavage joint between

18 the cold jam and the hot jam -- or I should say the oven

19 itself, oven wall. There's a jam here and the joint between

20 them they spray patch.

21 Q Do you recall the names of any of the

22 manufacturers of the gunnite material?

23 A I can't bring any up. Some of them I

24 probably would recognize if I heard it.

25 Q Have you ever seen North American

66

1 Refractories or NARCO gunnite?

2 A NARCO, yes.

7 Q Kind of familiar because they had that

8 great big Indian head on their bags or some other reason that

9 the name sticks with you?

10 A They made available a gun for use and

11 they called it a Narcoater.

12 Q Okay. Have you ever -- or is the name

13 Narcogun as a spray material familiar to you?

14 A Yes.

67

5 Q What about Plibrico?

6 A The name rings a bell. I don't recall

7 seeing it applied with a gun.

8 Q Do you recall ever seeing any uses for a

9 gunnite in the by-products area?

10 A I'm sure its use would be rare. I seem

11 to recall it was used somewhere, but I can't tell you what it

12 was.

13 Q Are you familiar with a product called a

14 lightweight castable?

15 A Yes.

16 Q Okay. Can you tell me some uses for a

17 lightweight castable in a coke oven?

18 A On some jobs a lightweight castable was

19 used as part of a mixture to insulate the battery top under

20 the paving rather than the other material. I can't think of

21 the other uses right now.

25 Q I want to go back and run some names by

68

1 you and see if we can put any particular product names with

2 some of the products we've talked about. I'll start

with a  
 3 pipe insulation, that's the first thing we talked about.  
 Do  
 4 any brand names of any pipe insulation come to  
 mind?  
 5 A Johns-Manville, Philip Carey. Are you  
 6 talking about all types of insulation?  
 7 Q Starting with just pipe insulation.  
 8 A But all types of piping insulation  
 9 materials?  
 10 Q Yes.  
 11 A Owens-Corning.  
 12 Q Have you ever heard of the name Kaylo?  
 13 A Yes.

22 Q What about Unibestos?  
 23 A I've heard of that.

69

2 Q How about Calsilite?  
 3 A Yes.

6 Q I'd like to go back and ask you a  
 7 question before I continue on with the types of  
 products or  
 8 brand names. Have you ever seen a spray material  
 applied to  
 9 any of the steel structures in a coke battery or  
 by-products  
 10 area to protect the structure itself from heat?  
 11 A I've seen it used, but I don't believe it  
 12 was in a coke plant.  
 13 Q Or a by-products area?  
 14 A No.  
 15 Q In a steel mill?  
 16 A Actually in a tar plant.  
 17 Q Now, I want to go on next to the block  
 18 insulation. Do you associate any names with block  
 19 insulation?  
 20 A A couple jump out. Again, J.M. and  
 21 Philip Carey.

22 Q Okay. What about Kaylo?  
 23 A Yes.

70

23 Q Now, let's talk about some insulating  
 24 concretes that you mentioned, see if we can put  
 some names to  
 25 it. Do any brand names come to mind that you  
 associate with

71

1 an insulating concrete?  
 2 A A designation comes to mind, C-3.  
 3 Q Have you ever heard of or does the name  
 4 Carey Temp insulating cement ring a bell?  
 5 A Yes.

8 Q How about GREFCO insulating cement?  
 9 A Yes.

72

2 Q How about Plisulate?  
 3 A The name recognition only.  
 4 Q The name Plisulate is familiar to you but  
 5 you can't put a particular product with it?  
 6 A Yes.

15 Q What about millboard, any names come to  
 16 mind?  
 17 A No.  
 18 Q What about -- let me run some names by  
 19 you. GAF?  
 20 A GAF, yes.

24 Q Now, the next thing I think we talked  
 25 about was gunnite. We've been through some  
 names on those

73

1 lightweight castables. Can you think of any names  
 of  
 2 manufacturers of lightweight castables?

3 A Harbison-Walker, GREFCO.

112

1 Q The Bich-Mastic, was it a sub-type of an  
2 overall type of product called the fiber pitch or is  
3 fiber

4 pitch just out in left field? I'm trying to figure out if  
5 those two are related.

6 A I'm not certain of this. It's possible  
7 that fiber pitch could have been used in some  
8 Bich-Mastics.

9 It certainly wasn't used in a lot of them; but could  
10 have

11 been, I don't know that. But Bich-Mastic was the  
12 designation

13 for a whole series of coatings.

14 Q Okay. And in your experience that was

15 one type of product that was used to coat and  
16 weather protect

17 exterior structures such as steam lines or -- not  
18 steam lines

19 but piping or vessels that were exposed to weather?

20 A More generally to structural steel or

21 pipes that conveyed materials that didn't have a  
22 temperature

23 that would render them useless; in other words,  
24 cooler

25 materials, structural steel, pilings.

1 Q Okay. Now I think I understand what

2 you're talking about. So, it would be more on a low  
3 temperature line such as like a cold water or  
4 something like

5 that, it would not be used on a high temperature  
6 steam or

7 something like that because that temperature would  
8 melt the

9 Bich-Mastic?

10 A Yes, it would.

11 Q Okay. Because I was looking at

113

1 references to use of Bich-Mastic in some of the

contract

2 things that I've seen, and I'm trying to figure out  
3 what kind

4 of function it would have in the overall scheme of  
5 coke

6 ovens. So, it's more a low temperature coating like a  
7 sealant?

8 A Yes.

9 Q Was there another product that was used

10 on the X -- on a -- let's say you had a tank or a vessel  
11 that

12 was a hot tank that that would coat it if it was  
13 exposed to

14 weather?

15 A We used high temperature enamels.

16 Q Were those vessels typically insulated

17 with something before you put the enamel on or  
18 was it just

19 enamel right on steel?

20 A Normally a high temperature vessel

21 wouldn't have that sort of coating because generally  
22 it was

23 going to be insulated. Quite frequently they would  
24 have a

25 primer, then the insulation would be applied and  
then a

covering would be put over the insulation.

2 Q So, there would be something that would

3 go -- now, on a tank, would you use block  
4 insulation on a

5 tank?

6 A Generally.

7 Q Okay, just so we're talking about a

8 generic kind of product. So, you would have a  
9 primer, a

114

1 block insulation and then something -- what would  
2 be put on

3 the outside of the block insulation?

4 A It could be galvanized sheeting, it could

5 be aluminum sheeting, it could be stainless steel

sheeting.

5 Q Okay. So, if I understand, to generalize

6 kind of a thin, flexible metal coating to protect the  
7 insulation itself?

8 A Right, to protect it from weather.

9 Q Okay. I want to go back and ask some

10 questions about the products that we identified

11 earlier from the brands that you recall. On a coke  
oven job

12 where the coke oven was built either from the pad  
up or from

13 the dirt up, would that job require the use of pipe

14 insulation?

15 A Yes.

16 Q Okay. And in your experience would the

17 pipe insulation have been one of the brands that  
you

18 recalled?

19 A In general, although there are

20 exceptions.

21 Q Okay. And in the instance of a coke

22 battery that's being built either from the ground up,  
the

23 dirt up or the pad up, it would have required also  
the use of

24 block insulation or not? I'm trying to remember --  
I'm

25 sorry. Strike that because you had said in a coke  
battery

115

1 that those were just generally temporary measures  
for

2 bulkheads.

3 A Yes.

4 Q And so, the answer probably would be no,

5 not generally for the construction, only for  
temporary

6 measures?

7 A Yes.

8 Q Okay. Now, in the instance of building a

9 coke battery either from the ground up or a pad up, it  
would

10 have required the use of an insulating concrete;  
correct?

11 A Generally, yes.

12 Q And generally it would have been from

13 your recollection one of the brands that you've  
identified

14 already?

15 A Yes.

**(Respirators March 27, 1998)**

208

23 Q Okay. Let me rephrase that. Did

24 Koppers provide to its employees, including  
contract

25 employees from union halls, dust masks or  
respirators

209

1 for work at any of the contract sites?

5 A I'm not aware that they did when I

6 started.

**(Exposure of bystanders March 27, 1998)**

119

24 Q Okay. Just trying to get an

25 understanding. If Koppers were doing -- for the sake  
120

1 of example, what am I talking about -- a repair job on

2 one of the batteries, let's say, at an Armco plant,

3 then part of the battery would be in operation with

4 Armco people doing whatever it is they do around  
the

5 battery, and on the other part of the battery, it would

6 be Koppers people doing whatever their repair job

7 required them to do?

11 A Yes.

12 Q Would that be from -- would that be

13 pretty much from beginning to end that the two  
groups

14 would be working in the same battery at the same  
time

15 until Koppers had completed its repair work?

16 A Normally, yes.