

Minutes
GENERAL MEETING
Asbestos Textile Institute
February 10, 1967
The Cherry Hill Inn, Cherry Hill, N.J.

In Attendance:

AMERICAN ASBESTOS TEXTILE CORP.
J.L. Rainey

GARLOCK INC.
N.L.A. Martucci
G.B. Houghton
W.A. Garrison

JOHNS-MANVILLE CORPORATION
W.S. Hough
E.A. Schuman
W.C. Atkinson
I. Barnett
W.C. Streib
C.L. Sheckler
W.J. MacAlpine

H.K. PORTER COMPANY, INC.
J.D. McCluer
D.E. Childers

RAYBESTOS-MANHATTAN, INC.
J.A. Brown, Jr.
J.A. Bettes, Jr.
E.Q. Scowcroft
L.C. Williams
J.P. Wronski

CADWALADER, WICKERSHAM & TAFT
W.J. Flocken (Legal Counsel)

ASBESTOS CORPORATION LIMITED
F.P. Carson
G.F.A. Brink
B.L. Alexander
P.E. Leclerc

BELL ASBESTOS MINES LIMITED
Wm.J.W. Smith
R. Dodds-Hebron

CASSIAR ASBESTOS CORP. LTD.
T.T. Tigert

TURNER BROS. ASBESTOS CO. LTD.
W.F. Beckman

TALLMAN-McCLUSKEY FABRICS CO.
J.L. Mitchell
Ted D. McCluskey

UNITED STATES RUBBER COMPANY
S.J. Peele, Jr.
H.T. Austin, Jr.
E.A. Morris
G.C. Holroyd

ASBESTOS TEXTILE INSTITUTE
H.E. Sunbury (Secretary)

Guests: Mr. Charles Hoffman, Belmont Packing & Rubber Company, Phila., Pa.

******** Minutes ********

1. President J.L. Rainey called the meeting to order at 9:45 A.M. and asked each person to stand and identify himself and his company affiliation.

2. The minutes of the last meeting were presented for reading. Mr. Brown moved reading be omitted. Seconded by Mr. Peele. So voted.

3. The Financial Report was presented by Treasurer N.L.A. Martucci. Mr. Brown moved that report be accepted. Seconded by Mr. Hough. So voted. The report is made a part of these minutes.

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ACL Doc 21077 · Page 1 of 8 asbestosclaims.law/library/21077/1

4. Legal Counsel Report: R.Jay Blocken, Legal Counsel, discussed two recent cases decided by the Canadian courts under the Combines Investigation Act and also reported some statistical highlights on 1966 antitrust enforcement activities by the Department of Justice. Counsel stated that Canadian courts appear to take a somewhat more permissive position on price discrimination under Canadian law than that taken by the Federal Trade Commission in applying the Robinson-Patman Act, but reflect a sterner attitude regarding industry statistical programs than that of American courts.

5. Mr. [illegible] Smith, Cell Asbestos Mines Limited, presented report on behalf of the Asbestos Fibre producers. He stated that the year 1966 had been a fairly good year as shipments were up about 9% over the prior year. For 1967 there is some difference of opinion as some think that Grade 7 may be "soft" in some areas of the world market. Sales in U.S.A. may drop (shorter fibres) to reflect lower automobile sales, but this is not necessarily true for textile spinning grades. France and Germany may move up in their consumption of various grades of fibre.
Mr. Smith digressed briefly to mention Expo 67 which is scheduled to open on April 28th. Believes that it will be sensational in all respects - a cultural tone will be stressed in the exhibits. Said that the asbestos producers would have an exhibit.

6. President Rainey mentioned that Mr. [illegible] Alexander of Asbestos Corporation Limited was to be in charge of that company's new mine known as "Asbestos Hill" some 1200 miles due north of Thetford Mines, and asked Mr. Alexander to tell us something about it. He said he was thrilled with his new assignment but didn't know too much about it as yet. There is no railroad, and all transportation is by plane or boat (in season). He expressed regret that he would not be able to attend ATI meetings regularly because of the new position.

7. Mr. G. Ellwood Houghton, of Garlock Inc., was the main speaker. His subject: "The Use of Asbestos Textiles in Industrial Products", was of great interest to the members present, and we are pleased to have had the opportunity to hear his presentation. Mr. Houghton had assembled a fine collection of samples, and these were used to illustrate his talk.*

8. The committee reports were given by the respective chairmen as listed below. The full text of their reports is attached to these minutes.

Sales Promotion Committee - W.S. Hough, Chairman
This was Mr. Hough's final report as Chairman as he will not be an active member of ATI after this month, due to his resignation from Johns-Manville Corporation. At the conclusion of his report, President Rainey presented Mr. Hough with a leather-covered copy of the new (3rd) Edition of our "Handbook of Asbestos Textiles" in appreciation of the fine work that Mr. Hough did in pushing this to completion with the cooperation of his committee. Mr. Hough responded with appropriate remarks.

Air Hygiene Mfg. Committee - Mr. W.H. Atkinson, Chairman
Technical Committee - Mr. J.D. Culver, Chairman
Fiber Testing Committee - Mr. J.L. Aronsohn, Chairman

* Outline attached.

Asbestos Textile Institute document ATI-59: Asbestos Textile Institute General Meeting Minutes, February 10, 1967... Published by AsbestosClaims.Law
ACL Doc 21077 · Page 2 of 8 asbestosclaims.law/library/21077/2

9. President Rainey made special mention of the fact that our old friend Jack Bettes was present at this meeting. Mr. & Mrs. Bettes are planning to leave in a month or so on a trip to Europe, and the best wishes of our members for a pleasant trip will go with them.

10. President Rainey paid tribute to his predecessor, saying: "On behalf of the members of the A.T.I., I would like to express our gratitude to Jack Brown, who served so capably as our president for the last two years, and I feel that he deserves a great hand." The applause was loud and prolonged!

11. President Rainey announced that the next regular meeting of the Institute would be held on June 8th and 9th (arrival June 7th). The location desired is Montreal, Canada. HOWEVER WE HAVE NOT AS YET BEEN ASSURED OF ACCOMMODATIONS THERE. We are continuing our efforts to get suitable hotel or other accommodations, and will advise the members as soon as we have anything definite on this (Note: See addendum to these minutes.)

12. In respect to our October 1967 meeting we have a firm commitment to hold this at the William Hilton Inn, Hilton Head Island, South Carolina. This seashore resort is highly recommended by members who have stayed there, and it should appeal equally well to both members and their wives. Hilton Head Island is located about 40 miles from Savannah, Georgia, and is a beautiful and historic spot! Members are urged to bring their wives, and help to make our Annual Meeting next October the biggest and best ever. The dates are October 5-6th, 1967 (arrival Wednesday, October 4th).

13. At this point in the meeting, President Rainey presented Mr. W.S. Hough with a beautiful plaque on behalf of the Board of Governors and the members of the Institute in appreciation of his valued service to the Institute over a period of many years. Mr. Hough, visibly moved by presentation of the plaque, expressed his deep appreciation.

14. There being no further business to come before the meeting it was duly adjourned. A luncheon followed the meeting.

Respectfully submitted,

M.E. Sunbury
Secretary

Addendum:

Subsequent to this meeting we received confirmation of our request for accommodations in Montreal. Headquarters will be the Lucerne Hotel Annex, 4950 Sherbrooke St., East, Montreal, P.Q., Canada. As instructed in our circular letter to members dated March 15, 1967, reservation requests should be sent directly to Mr. Les Agres, Mgr., Lucerne Hotel Annex, specifying date of arrival and departure. Check for one night's lodging ($23.50 per room plus 6% tax) must accompany the request. Prompt action in making reservation requests is necessary due to anticipated shortage of rooms. Remember the dates - June 8th and 9th, with arrival on June 7th!

M.E.S.

Asbestos Textile Institute document ATI-59: Asbestos Textile Institute General Meeting Minutes, February 10, 1967... Published by AsbestosClaims.Law
ACL Doc 21077 · Page 3 of 8 asbestosclaims.law/library/21077/3

ASBESTOS TEXTILE INSTITUTE

Report of Funds — January 10, 1967

Balance on hand at last report, September 9, 1966

General Fund	$ 4067.89	
Savings Fund	19225.26	
Petty Cash Fund	76.90	
		$23368.05
Receipts		
To Savings Fund (Interest)	481.48	
To General Fund (Book Sales)	212.98	
To General Fund (Fibre Test Man.Acct.)	315.87	
		1010.33
Total On Hand and Received		$24378.38
Disbursements		
Legal Retainer (5 mos ending 11/30/66)	500.00	
Legal Expense " " "	206.72	
Secretary's salary (5 mos)	598.75	
F.I.C.A. Tax (3rd & 4th Qtr 1966)	65.95	
Secretary's Travel	330.37	
Office Rent (5 mos)	375.00	
Accountant (Caruso,yr endg 9/66)	300.00	
Exhibit Expense	66.14	
Handbook Expense (3rd Edition)	622.45	
Printing & Office Supplies	159.84	
Stenographic	24.00	
Meeting Expense (October 1966)	886.67	
Insurance (Adjusted Premium)	5.46	
Telephone (4 mos)	157.40	
Dues (I.H.F. & A.S.T.M.)	160.00	
Petty Cash (Vouchers 267-288 incl.)	86.98	
		4545.63
Balance on hand as of January 10,1967		$19832.75
Funds		
General Fund (Bank Statement of1/10/67)	447.64 (*)	
Savings Fund	19304.74	
Petty Cash Fund	80.37	
Total Funds		19832.75
Assets as of January 10, 1967		
General Fund	447.64	
Savings Fund	19304.74	
Petty Cash on Hand	80.37	
Accts Receivable (Book Sales)	79.44	
Accts " " (Dues for 1967)	9250.00	
Postage on hand	6.50	
Furniture & Equipment (Nominal Value)	1.00	
Total Assets		29169.69
Liabilities (None)		
Net Worth		$ 29169.69

(*) $400.00 transferred from Savings to General Fund 1/3/67

Respectfully submitted,

H.E. Sunbury

H.E. Sunbury
Asst. Treasurer

ATI-000059_0004

Outline of Talk given at

ASBESTOS TEXTILE INSTITUTE General Meeting
February 10, 1967
Cherry Hill Inn, Cherry Hill, N.J.

"THE USE OF ASBESTOS TEXTILES IN INDUSTRIAL PRODUCTS"

BY

C. Ellwood Houghton, Product Engineer

GARLOCK, Inc., Palmyra, N.Y.

"From a rock it comes and to a rock it will return, and I don't want no rocks on my piston rods.!" - this was the reply given by a practical engineer many years ago when approached to try asbestos packing on his steam engine. Progress has been made since that time. With the many men here today who have been closely associated with manufacture and sales of asbestos textiles, much of what is said may be very familiar, but a review of the subject may be of interest.

There are many qualities in the wonderful mineral, asbestos, that make it ideally adaptable to a multitude of products and uses. No attempt will be made to cover the full subject, but only to highlight its use. The fact that asbestos is composed of extremely fine filaments makes it a flexible rock which can be treated as a textile fiber and can be carded, spun, twisted and woven. The fineness of filament and its ability to hold lubricants, makes it a good bearing and packing material Its resistance to decomposition in air in temperatures as high as 1000 degrees "F", and at still higher levels when confined, make possible applications as shields against convection and radiant heat, acts as a friction material, and helps seal in both gaskets and pressure packings.

Asbestos, being a "salt" of metals and silicon, has its demand for oxygen fully satisfied, therefore it will not burn. The majority of asbestos products can be made of Commercial and Underwriters grade blends. These resist decomposition up to about 400 degrees F. As temperature requirements rise, a reduction in organic supporting fiber is needed, and a corresponding increase in longer staple asbestos fiber is required to make possible the carding and spinning of yarn.

Textile Products

A. Carded Asbestos Fiber is the first of the textile products and finds a number of uses, one of which is for the filtration of liquids. Fiber, which is milled or ground to shorter staple length, is also prepared for filtration purposes. Water, wine, cider, and chemical solutions have all used asbestos as a filter.

B. Carded Batts are used as a fiber supply for other manufacturing processes. The application of insulation to wire along with a binding material is one of the uses for batts.

C. Carded Slivers are of value because of their soft resilience. Insulation tape and cushioning for certain types of gaskets use sliver in their construction. Here is a specimen of an insulation tape to wrap on piping for steam or refrigeration protection. Sliver is twisted to form a certain type of wicking.

Asbestos Textile Institute document ATI-59: Asbestos Textile Institute General Meeting Minutes, February 10, 1967...
ACL Doc 21077 · Page 5 of 8
Published by AsbestosClaims.Law
asbestosclaims.law/library/21077/5

D. Carded Roving is also an ingredient of some forms of wicking. In the warning flares that are commonly used near excavations, asbestos wicking is used for the flame. Wicking finds use mainly as a caulking material in pipe joints. Asbestos rope is formed by twisting multiple strands of wicking together. For hard rope, a bonding cement is used within the rope. This is also used as caulking material. Large covers and door jams are sealed with rope usually seated in a groove around the periphery. Rope has been utilized as a leader in hot locations such as at the drying rolls of a paper machine or festoon dryers. Service cords for toaster and electric irons are often insulated with asbestos roving wrapped around the and cushioning the rubber covered wires. An outer jacket of durable cotton or other yarn is braided over the asbestos roving. Reinforced rovings with glass, cotton or other fine yarns are also made. Marine and Navy cables use reinforced roving as cushioning insulation.

E. Asbestos Yarn may also be found on service cords for electrical appliances. Most of you have made repairs to your gas mantles either on camp lanterns or possibly on the post light that many people have in front of their house now-a-days. The mantle is held in place by a piece of asbestos yarn. One type of corrugated metal gasket uses asbestos cord cemented in concentric rings in the valleys of the corrugations on both sides of the metal. This provides an effective seal when clamped between flanges, particularly if the surface of the flanges are rough or untrue. The packing industry uses quantities of asbestos yarn in braid and cloth.

It might be interesting here to relate the starting of our company. Packing plants are best known for the packaging of meats and vegetables. Mechanical packings often are foreign to the laymen.

About 80 years ago, Mr. Olin J. Garlock was a young engineer of a stationary steam engine. Considerable attention was required to keep the steam from leaking past the stuffing box. At one time, he cut some rings from an old rubber-fabric transmission belt. He lubricated and graphited them before installing the stuffing box. The new rings worked so well that he started cutting rings and peddled them in nearby factories. With the help of a few men, they started manufacturing and grew into the Garlock Packing Company. The need for asbestos soon became realized as the field for packings enlarged.

F. Braided Rings form a very satisfactory packing for rotary as well as reciprocating pumps. Braid readily deforms under gland pressure causing the packing to adjust tightly to shaft and packing box. Liquids and gases are packed with asbestos. Asbestos, with its fiber strength and lubricant holding qualities and resistance to decomposition, fits in well in this service. Some representative packing materials are on display, for example:

1. This valve stem packing may be used for hot or cold water service as well as steam and gases, and uses Commercial Grade yarn with controlled lubrication. 2.- Here is a valve stem packing for high temperature steam made from AAA (95%) asbestos yarn and Inconel wire reinforcement. 3. - Blue Asbestos finds use for concentrated acids as Chrysotile asbestos will not stand this service. 4.- Impregnation with various lubricants or in combination with Teflon, make them suitable for many services. Oils, greases, waxes, soaps, and edible lubricants are called on where needed.

ATI-000059_0006

5. The copper jacketed asbestos braid is of use as a door seal in high heat and severe service such as a blast furnace door or in steel mills, glass plants and foundry doors. 6.- One company transports molten aluminum in crucibles for over 100 miles using untreated Lattice Braid as a lid seal.

6. Asbestos Fabrics find a still wider use and range of application. At one time, the safety fire curtain in a theater was prominently labeled "Asbestos". The safety curtain in Radio City Music Hall is worth noting. This fabric was supplied by Johns-Manville about 30 years ago. A two section curtain with ridged girder construction spans the 130 foot stage. Wire reinforced asbestos fabric is stretched tightly over front and back like drum heads. -- Safety Clothing includes gloves, coats, helmets, and coveralls. Here are some fabrics used in these products. The aluminized fabric increases the shield against radiant heat by its reflective qualities.
Asbestos Curtains for shielding welding sparks or dropping molten metal are commonly used. Shields are used during repair of the refractory brick with the men working in vicinity of the open hearth furnaces and ovens. Glazers of cast iron plumbing fixtures, tubs, an and sinks use the asbestos cloth. The men have their wives produce custom made garments to shield them from the hot work.
An item that may gain in importance is the use of asbestos for smoke filter bags. The anti-air pollution movement is sure to grow.
Certain paper industries use an asbestos dryer felt which is woven endless to prevent marking the wet pulp web. Looms are built up to 60 feet in width. This makes possible an endless apron over 95 feet in circumference, and as wide as is required.
Laminated asbestos and phenolic sheets are made. Products include valve discs, rotor vanes for compressors and air tools, piston rings, motor insulation and inhibitor tubes for solid propellant rockets. The vanes for air compressors supply pressure for pneumatic equipment. Refrigerators and air conditioners use vanes.
In the manufacture of tin plate, the electrolytic process is most common. The hot metal plating is still required for some tin, zinc and lead. This is one form of brush used to wipe clean the steel squeeze roll used in removal of excess molten metal.
In the assembly of some ovens and similar work, a strip of cloth is required. An adhesive greatly speeds up this work of inserting the strips of cloth.
In the use of glass piping, a resilience is required in the joint gasket. This Teflon gasket is lined with rubber and asbestos fabric. Here is a rubber and asbestos ring which serves similar to the one first made by Mr. Garlock.
Woven industrial brake lining is used on the hold brake for elevators The deep wells drilled for oil require very heavy hold brakes. Here is a 10 ply construction of woven lining. Some wells have been drilled as deep as 25,000 feet.
Insulation blankets that are laced in position and may be removed and reused are valuable equipment. Here is an illustration of such pipe insulation. Tailored blankets are made for turbines and valves. The use of the springy Amosite fiber provides a very effective insulation. For the high temperature service, AAA Monel reinforced cloth is applied to the inner surface, with AA cloth on the outside.
Narrow lisling tapes are used in wire cable wrappings in motors.
Laundry presses and dry cleaning presses use asbestos pads and cover fabrics.

Asbestos Textile Institute document ATI-59: Asbestos Textile Institute General Meeting Minutes, February 10, 1967… Published by AsbestosClaims.Law
ACL Doc 21077 · Page 7 of 8 asbestosclaims.law/library/21077/7

Expansion joints are needed in pipe lines handling fluids or gases at high temperature. Asbestos finds its place here. Units from 1 1/2" to very large sizes are made. Here is a picture of a joint measuring 14 x 16 feet inside dimensxx dimensions.
Blue asbestos fabric impregnated with Teflon makes an effective gasket for strong acid and acid combinations. Rubberized asbestos cloth is used in a wide range of products. Man-hole and hand-hole gaskets are used in quantity. Water tube boilers are major users of hand-hole gaskets. The flat flanged gaskets are made up to any required size. Tad-pole gaskets are used in door seals. Another use is found in "package" boilers which are much in demand. High pressure packings use several forms of rings made from the rolled or folded forms of cloth and rubber.
Even with all the Diesel locomotives, the Button-Hole or locomotive front end tape designed for steam locomotives is still used. This forms two gaskets placed on either side of a row of rivets.
Here is a firmly rolled style used for the cover gasket on a kier in which poles and railroad ties are impregnated with creosote.

Molded items such as this "V" ring, and this cup, are of great value for high temperature service up to 600 degrees F. Steam and air at high pressures are effectively sealed with this type ring. Molded cups of rubber and asbestos are used in feed-water pumps for steam boilers.
Asbestos has been combined with Teflon to make very tough, heat resistant material. "V" rings have been made which answer a need in the oil fields where water with grit and sand, and other times with Portland cement, are sometimes pumped into the oil wells at high pressure.
In hydraulic rams where high heat may be present, the sintered Teflon-Asbestos "V" rings will hold and release where rubber sometimes seizes. Sintered Teflon-Asbestos has been used in producing fireproof insulating tubing to protect electrical cables for aircraft. This fireproof cushion clamp holds electrical cables also in aircraft.

The useful field for asbestos textiles is far greater than has been outlined today, but enough has been covered to show the great value of asbestos fiber in industrial products. The uses continue to grow!

About the Speaker: - C. Ellwood Houghton, Product Engineer, has been associated with GARLOCK Inc., since 1939. For twenty years he was superintendent of the Asbestos Textile Department prior to his promotion in 1959 to Product Engineer in Research and Development and Manufacturing Engineering Departments. Mr. Houghton has been awarded three product patents and has two additional patents pending. He has also contributed in a major way to machine innovations for new products and product improvements. Following his graduation from Philadelphia Textile School in 1927, he joined Johns-Manville Corporation, serving in several line and staff production operations for twelve years. Now in his fortieth year of continuous association with the asbestos textile industry, Mr. Houghton has a background of experience that is most impressive, and we were privileged indeed to have this opportunity to hear him discuss "The Use of Asbestos Textiles in Industrial Products".

Asbestos Textile Institute document ATI-59: Asbestos Textile Institute General Meeting Minutes, February 10, 1967...
Published by AsbestosClaims.Law
ACL Doc 21077 · Page 8 of 8
asbestosclaims.law/library/21077/8