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The ONLY DISINTEGRATOR treating the asbestos fibres without breaking them. Disintegrator used so to say by the most important Asbestos Mines of the whole world.

The above illustration shows a large plant comprising several AMMANN disintegrators in an asbestos mine.

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**Engineers** **CH 4900 Langenthal** **Switzerland**

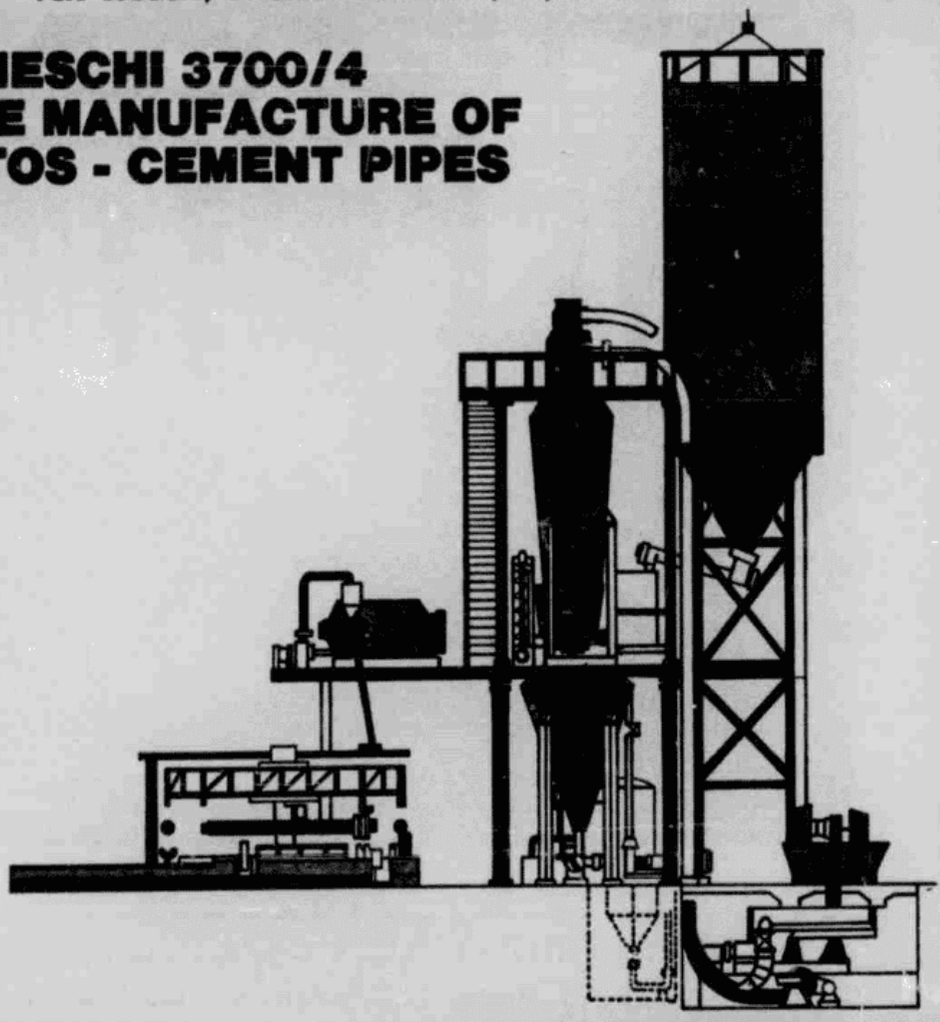
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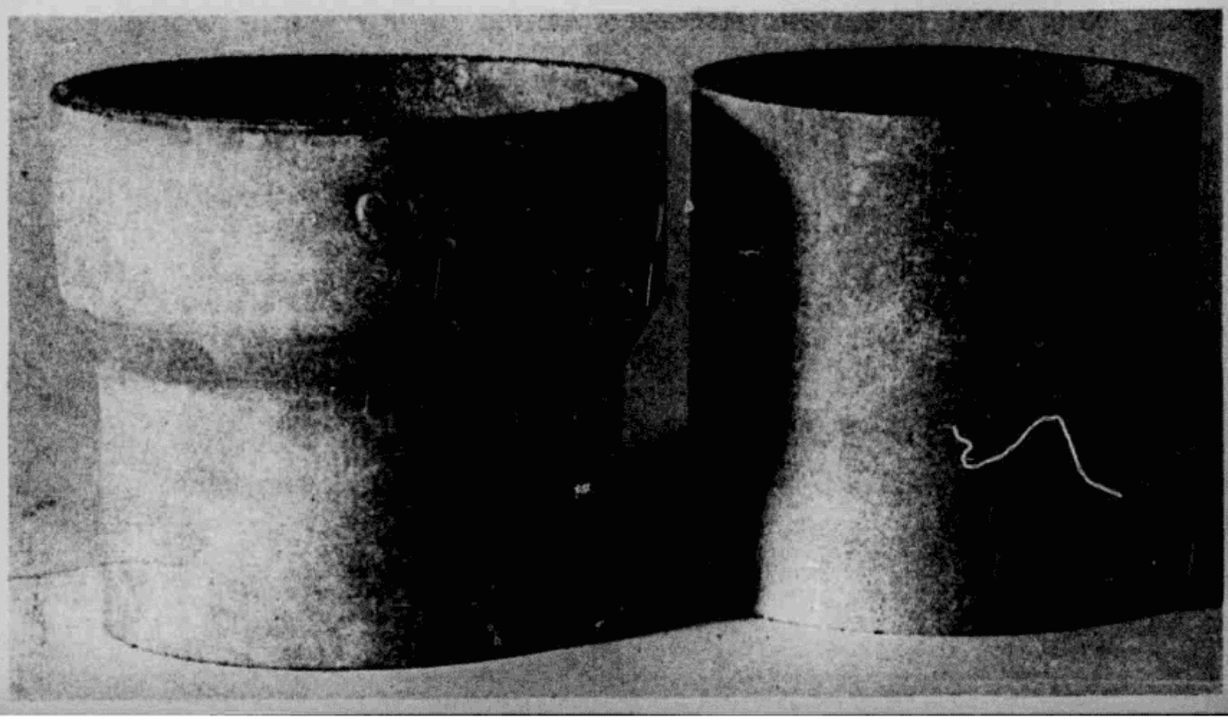

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## FOR THE MANUFACTURE OF
## ASBESTOS - CEMENT PIPES





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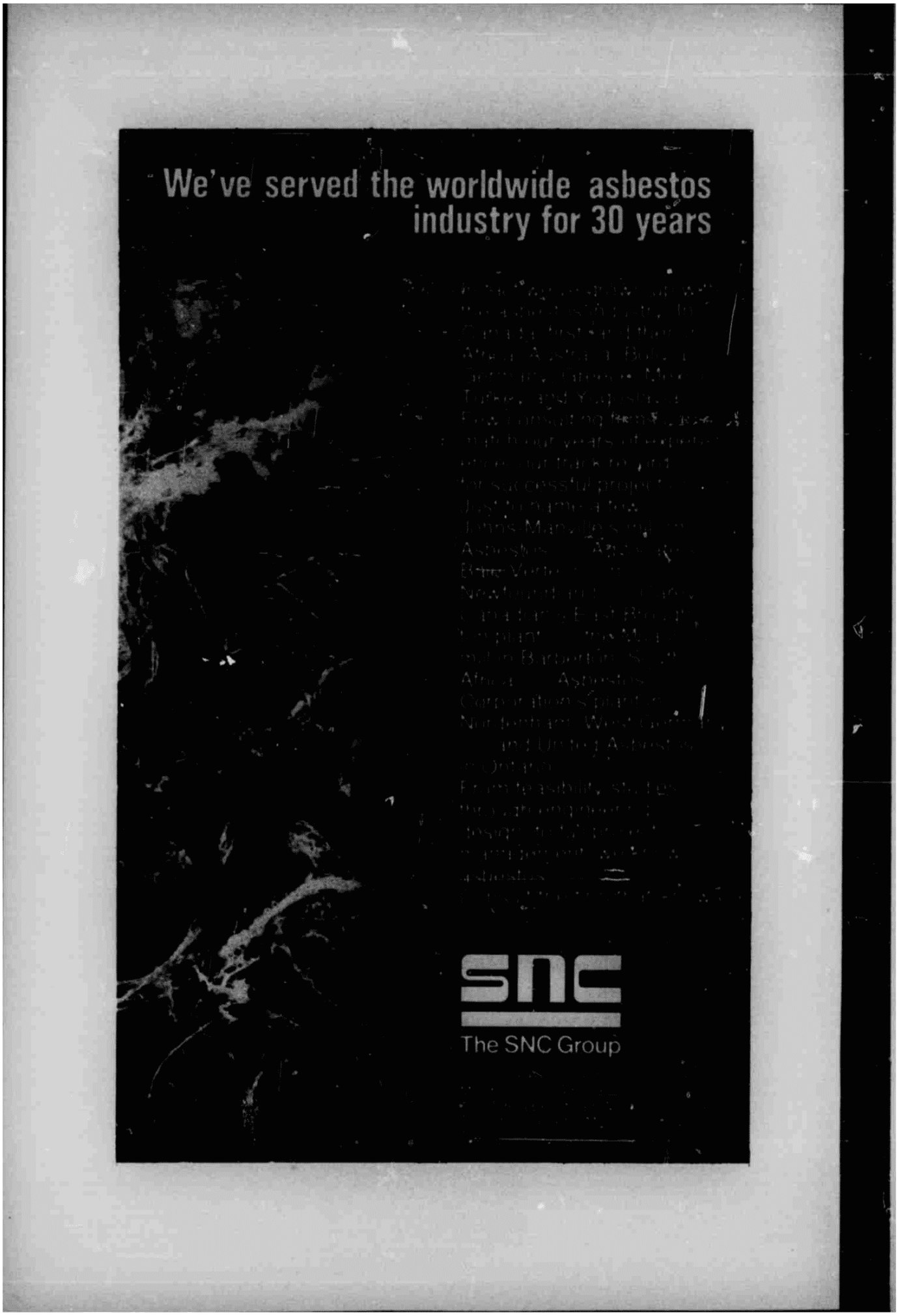
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# ASBESTOS

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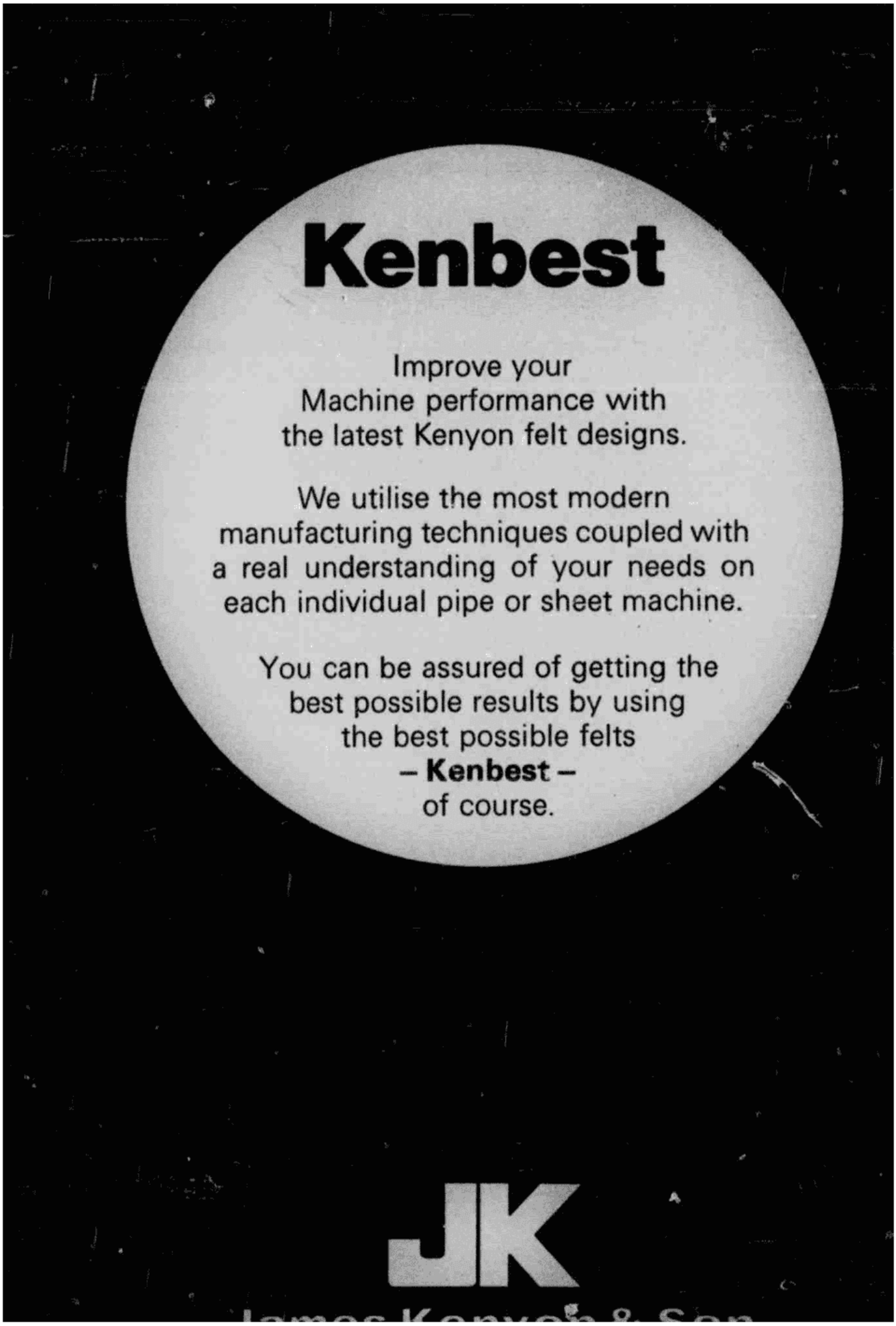
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# FELT CONDITIONING AND CLEANING

**Editor's Note: The following was prepared by David Manock, Product Development Engineer of James Kenyon & Son, Bury, Lancashire, England, based on an article which appeared in "JK Pilsworth News," a publication of that company. James Kenyon manufactures felts for use in paper and asbestos cement machines, is a member of Albany International Corporation and works in close co-operation with Albany Engineered Systems, another AIC subsidiary which is a worldwide supplier of felt-conditioning and other equipment for papermaking machines.**

## INTRODUCTION

Constant striving for higher production from asbestos cement machines has led to substantial improvements in the felts for such machines. While further advances in felt design and manufacture may well be expected, greatest production always requires that any felt be operated in such a way as to achieve its maximum potential capacity. Attainment of this goal depends to a great extent on the efficiency of the system for conditioning the felt. Since most machines incorporate some means for felt conditioning, the key question is whether the system in use is capable of adequately performing the job for which it is intended or, if not, what system will best serve the purpose.

## OBJECTIVE

To be effective, a felt conditioning system must perform several important functions, as follows:

(a) Loosen filling materials which have become embedded in the felt structure;

(b) Restore the bulk which is lost when the felt is pressed between the accumulator (mandrel) and anvil (drive) rolls;

(c) Remove the loosened filling materials and dewater the felt.

Having established these requisites for satisfactory conditioning, we may now examine the means which have been found best suited to their achievement.



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## JET SHOWERS

Recent experience indicates that the best method yet employed for loosening filling materials is the use of Very High Pressure Shower Systems. When such jet showers are positioned on the inside of the felt and operated at pressures of 25-35 kp/cm² (360-500 psi) they loosen and wash away undesirable materials lodged in the body of the felt and also restore much of the bulk which was lost when the felt passed through the nip of the accumulator roll. Such showers replace whippers or beaters and, because of their "vertical penetration," are actually much more effective than the mechanical devices, particularly when used with today's "vertically oriented" needled felts. An additional advantage lies in the fact that they do not have the effect of weakening the felt as do mechanical whippers and beaters.

## FAN SHOWERS

The bulk of the cleaning is best accomplished by using several high-volume, low-pressure fan showers. The first of these is best positioned just following the accumulator roll with its flow directed to the ingoing side between an inside felt roll and the felt itself. This takes advantage of the flushing action created by the roll pressing the water through the felt from back to face and forces a substantial percentage of the filling materials to the surface of the face side of the felt. The second low-pressure fan shower is positioned just following the first but is directed against the face side of the felt at an acute angle and with the direction of flow counter to that of the felt travel. It thus has a "slicing" action which effectively flushes off any filling materials which are on, or near, the surface of the felt. While the majority of fan showers operate at pressures of 3-7 kg/cm² (43-100 psi), mostly in the lower region, it has been found that best cleaning is obtained if they are run at pressures of 6-7 kg/cm².

## SUCTION BOXES

The final step in conditioning is performed by suction boxes which are intended to remove water and most of the remaining filling materials from the felt. It is accepted that a well-condi-



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tioned (dry) felt takes up stock from the first cylinder mold more efficiently than a wet felt and the importance of the suction boxes in dewatering the felt cannot be too highly stressed.

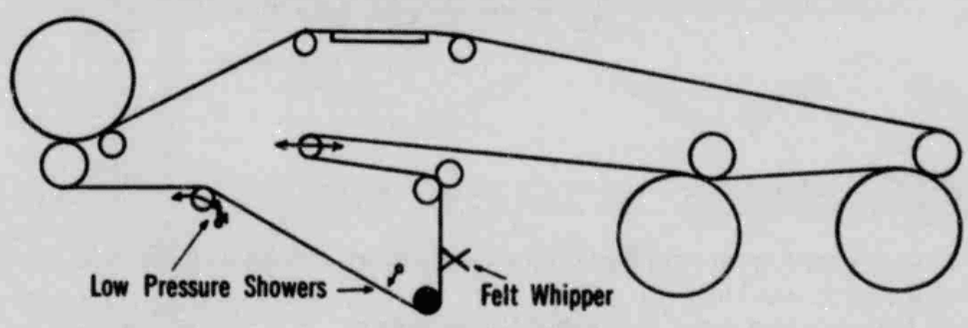
The performance of a suction box is determined by the arrangement and area of the slots in its cover and the rate of flow of air through them. For felt conditioning, it appears that a cover with a single slot between 15 and 20 mm in width and an air flow of 3-3.5 cu m/hr/cm² of slot area is most satisfactory. In some machines where suction boxes are provided but seem ineffective, the difficulty is usually due to excessive suction slot area and/or insufficient air flow. While on the topic of suction box covers, steel covers are subject to scoring by the cement particles and this leads to abrasion and shortening of the felt life. The use of high-density polyethylene for such covers minimizes abrasion and results in longer felt life.

Dewatering can be accomplished by wringers but they compact the felt and force filling materials deeper into its structure. In contrast, the suction box can adequately dewater and remove fillers with no adverse effect on the bulk of the felt.

## IDEAL CONDITIONING SYSTEMS

*Figure 1* illustrates what is considered a poorly-conditioned machine, not able to maintain the felt in a condition to provide maximum efficiency.

FIGURE 1—MACHINE WITH POOR FELT CONDITIONING



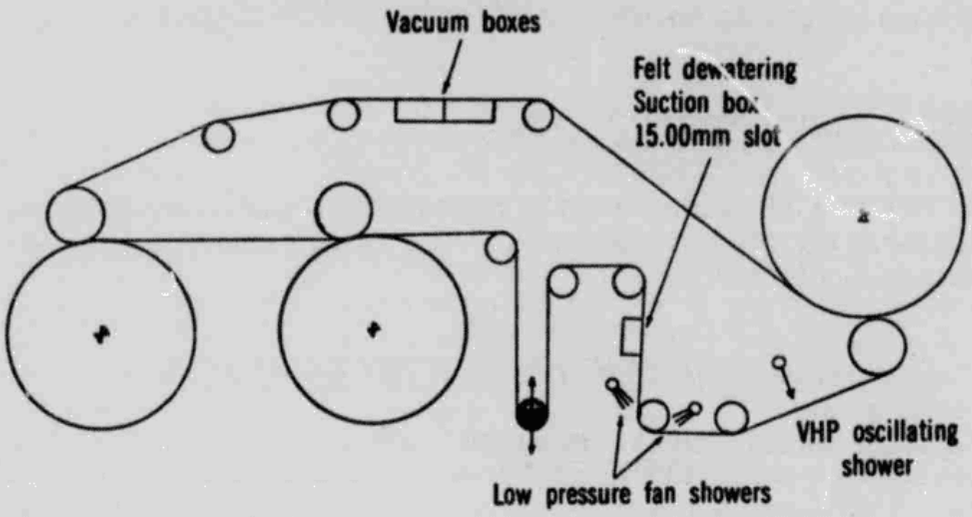

In actual practice, proper arrangement of the felt conditioning elements is important if best results are to be obtained. *Figure 2* diagrams a complete system incorporating all the




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previously-mentioned components arranged in the optimum relationship. The location of the high- and low-pressure showers has already been described. The proper location of the felt-cleaning suction box should be particularly noted. It is positioned on the face side immediately following the second low-pressure fan shower and ahead of the outside felt roll. This permits removal of fillers from the face side and prevents the outside roll from forcing them back into the felt. While the ideal system incorporates a Very High Pressure Shower, in some cases where this equipment cannot be readily installed great benefits can be obtained by using the other elements shown in *Figure 2*, provided they are positioned as indicated.

**FIGURE 2—IDEAL FELT CONDITIONING FOR BOTH SHEET & BOTTOM PIPE FELT**

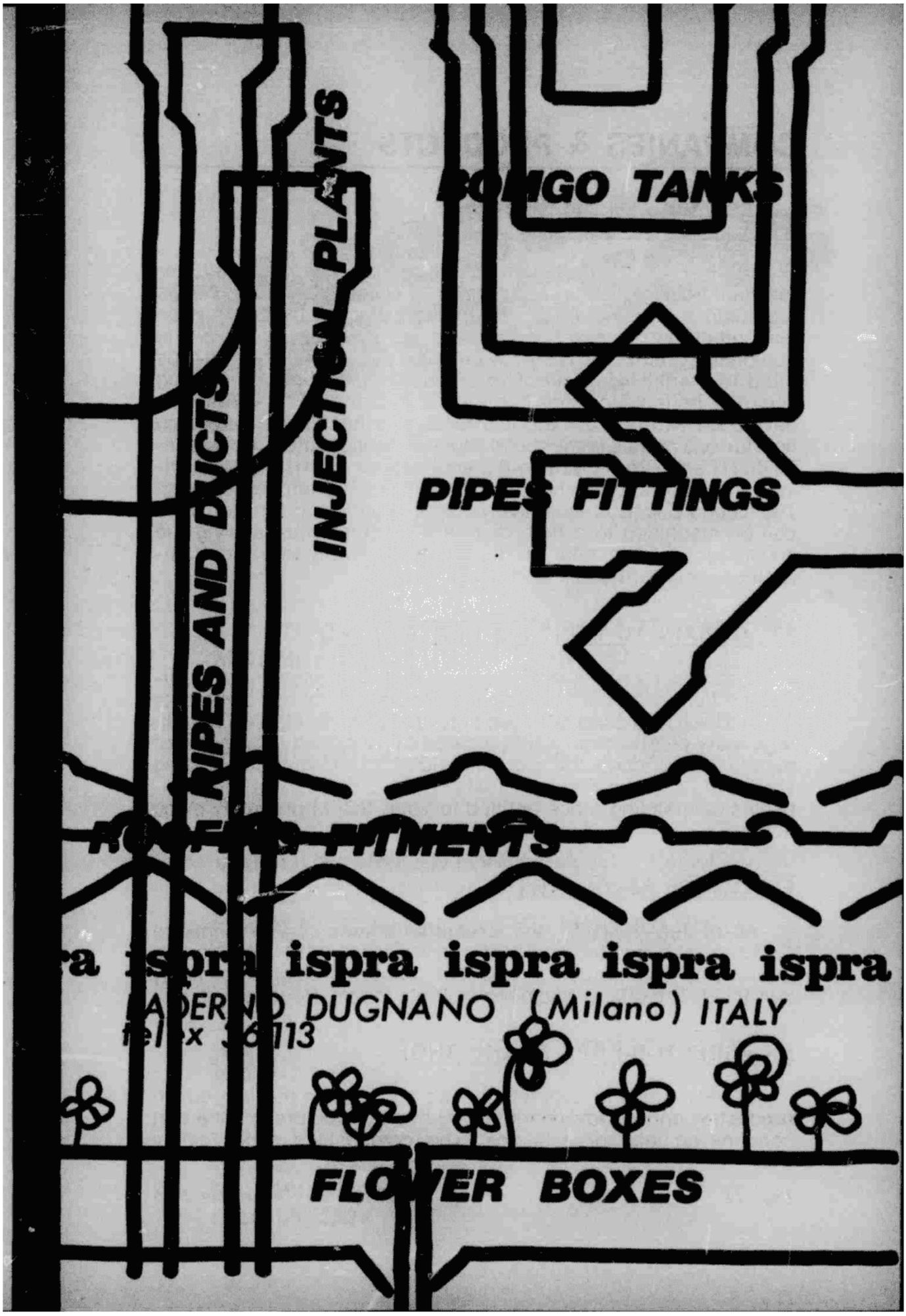



## CONCLUSION

In summary, it has been clearly demonstrated in practice that the longest working life and best production efficiency of any felt can be realized only if adequate provisions are made for proper conditioning including cleaning, bulk restoration and dewatering. The systems described represent the most effective means thus far devised for conditioning felts on both sheet and pipe machines.




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# COMPANIES & PRODUCTS

## CAPE DEVELOPMENTS

Secret-Fix is the tradename of a system to quickly install fire-resistant ceilings, launched recently by *Cape Boards and Panels Ltd*. Said to eliminate the use of cumbersome dust-extraction equipment during overhead drilling of asbestos ceilings, the complete system consists of Asbestolux ceiling panels with clips fitted to permit fixing direct to standard steel T-sections using separate bolts which lock the panels in place. . . . CBPL has developed two board materials for use in handling molten and non-ferrous metals in the metal processing industries. UK Marinite 45 HT and 720 HT extend the applications of existing UK Marinite 45 board and are capable of withstanding temperatures of 750°C and 800°C, respectively. Light weight and the fact they can be machined to a high degree of accuracy are among the advantages of the new products over conventional high-temperature-resistant brick and metal casing.

## ST. GOBAIN TO CONTROL CERTAINTEED

Late last month it was learned that *Compagnie de Saint-Gobain-Pont-a-Mousson* desired to acquire voting control of *CertainTeed Corporation*. Conditioned upon receipt of certain regulatory clearances, SGPM intends to undertake a program of purchasing enough of CertainTeed's 13-million outstanding shares of Common Stock so that it owns over 50% of the company's outstanding stock entitled to vote. SGPM presently owns about 40% of the outstanding voting stock of CertainTeed.

## FLINTKOTE RELOCATES

As of July 1, 1976, the executive offices of *The Flintkote Company* are located at Washington Plaza, 1351 Washington Boulevard, Stamford, Connecticut 06902—Telephone: (203) 324-9300. The offices had been in White Plains, New York.

## ICI ASBESTOS-FREE BRAKE SHOE

*IC Industries Inc.* has announced it will begin the immediate production and worldwide marketing of a railroad brake shoe that contains no lead or asbestos. The composition shoe, called



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# asbestos processors

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Tiger, was developed by researchers at ICI's Abex Corporation subsidiary during the past four years at a cost of about $4-million. The company has applied for a patent and is willing to license other manufacturers. Abex predicts the new shoe will become standard for the rail industry. Prices for the new product will be the same as for current composition shoes. The rail car industry's demand for composition shoes is estimated at $27-million during the next 12 months.

## J-M HAPPENiNGS

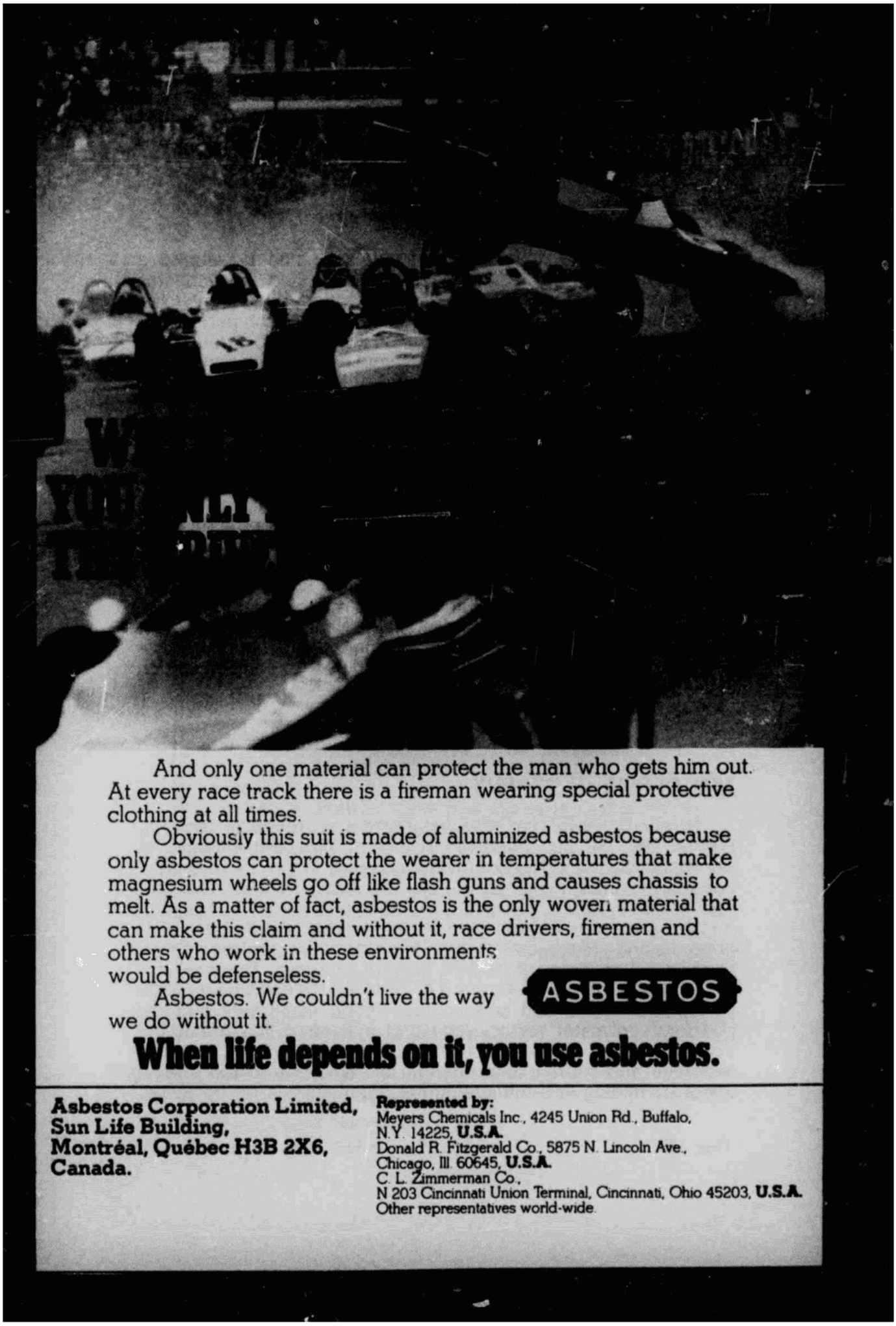
*Johns-Manville Corporation* officially dedicated its $55-million world headquarters complex on July 4, 1976, culminating five years of effort and planning. The complex is located near Denver. Colorado, in a spectacular setting in the foothills of the Rocky Mountains. . . . To tie in with its new service, the Econ Insulation Savings Computer Analysis, J-M has issued a form designed to gather the information needed to determine the most economic thickness of insulation for various piping and flat surface applications. Economic thickness is that thickness of insulation where the combined total cost of heat lost and total cost of insulation is the lowest.

## ENCAPSULATE—DON'T STRIP

To combat the problem of creating asbestos dust, *Liquid Plastics Ltd.*, of Preston, England, suggests encapsulation as an acceptable alternative to removing asbestos insulation. LPL says that one of its systems, Decadex Firecheck, has been found ideal for sealing asbestos, especially the fibrous soft asbestos insulation used for fireproofing surfaces. Encapsulation is defined as the wrapping of a surface with an elastomeric seamless membrane which gives excellent adhesion and provides an effective, durable cladding without relying on a mechanical or chemical key to the surface. Decadex Firecheck can be applied by spray or brush to form a seamless, waterproof and elastic membrane covering. Vacuum cleaning of the surface to remove loose dust should suffice, except in areas of major grease contamination where careful "arms-length" solvent cleaning should be employed. Should the membrane be accidentally ruptured, it is a simple matter to cut out the ruptured section and re-apply Decadex Firecheck to renew the seal.



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And only one material can protect the man who gets him out. At every race track there is a fireman wearing special protective clothing at all times.

Obviously this suit is made of aluminized asbestos because only asbestos can protect the wearer in temperatures that make magnesium wheels go off like flash guns and causes chassis to melt. As a matter of fact, asbestos is the only woven material that can make this claim and without it, race drivers, firemen and others who work in these environments would be defenseless.

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Other representatives world-wide.

## NIBBLE AWAY WITHOUT DUST

*Nibblertine Ltd.*, of Wembley, England, has developed a machine that will cut fully and semi compressed flat asbestos boards without the need for dust extraction equipment. The Nibblertine has a contoured smooth edge blade which performs a punching, shearing action as asbestos board is fed through the cutting head. By eliminating the use of high-speed saws and grinding discs, undesirable asbestos dust levels normally experienced when cutting flat asbestos sheets are reduced to an acceptable level while still achieving a clean, straight cut edge. The machine has an approximate cutting rate of 50 feet per minute and the capacity to cut fully compressed, flat asbestos-cement boards up to ⅜" thick; semi compressed, flat a/c boards up to ½" thick; and soft, flat asbestos insulation boards up to ½" thick. Cutting tests resulted in dust concentrations well below two fibers per milliliter (fibers greater than five microns in length). Due to the composition of asbestos insulating board, the company advised it is necessary to employ a small localized extraction unit in conjunction with the basic machine cutting head. Instead of the usual fine dust associated with cutting asbestos, the Nibblertine technique produces long solid pellets of waste which drop through the base of the cutting bed for easy collection in a suitable container ready for disposal.

## T&N OFFICE IN CYPRUS

*Turner & Newall Ltd.* has established an office at Nicosia, Cyprus, and has appointed Ian Forbes as Resident Manager in the Middle East and North Africa to promote in that increasingly-important market products of *TAC Construction Materials Ltd.* and *British Industrial Plastics Ltd.* Coincidently, a 12-page brochure, written in English and Arabic, describes not all T&N products and processes but those likely to be of greatest interest to possible licensees in Middle Eastern markets. The products described in the brochure are a/c building materials and pipes; PVC pipes, resins and compounds; amino resins and molding powders; polyester resins; industrial and insulation materials; and automotive components. Also discussed are the technical expertise and international strength of T&N, one of the largest asbestos mining and manufacturing organizations in the world.




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# MARKET CONDITIONS

## GENERAL BUSINESS

General business continues to improve but the rate of recovery has definitely slowed from the fast pace of the first quarter. Personal income is improving and this should help to sustain consumer spending which slowed somewhat during the summer months. The on-again, off-again performance of the housing market has been discouraging but permits for new housing rose strongly in July. Orders for capital goods are increasing and these should serve as a welcome balance to the activity in consumer goods which has sustained the recovery thus far.

Latest statistics show consumer price indices are holding fairly steady but prices of industrial goods, particularly of metals and metal products, continue to move steadily upward. Some observers feel that, while inflation has been temporarily contained, it is only a matter of time until a combination of circumstances will result in a renewed approach to double-digit figures. While that may be pure conjecture, the fact remains that, throughout the recession and the recovery period to date, there have been no substantial downward price corrections except in the cases of certain commodities and even the most optimistic forecasts envision only an easing and not a cessation of inflation as a factor in our economic life. Businessmen and investors are well aware of the threat to the economy posed by runaway inflation and are exercising a certain amount of caution because of it.

The Republican nomination of Messrs. Ford and Dole winds up the political preliminaries and campaigning for the Presidency will now begin in earnest. The proposed debates between the candidates should give the electorate a clearer idea of Mr. Carter's position on key issues than was made evident during his campaign for the nomination. At the same time, Mr. Ford will have the opportunity to convince the voters that his policy of moderation and fiscal and monetary restraint has, indeed, succeeded in checking inflation and laid the base for a sound, upward-moving economy. It will be most interesting to see and hear the confrontations and to see what effects they may have on the electorate.

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***WHEN WRITING TO THIS MAGAZINE,*** please be certain to include "P. O. Box 471" in the mailing address and position it immediately above "Willow Grove, Pa. 19090."



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## MOTOR VEHICLE FACTORY SALES

*Six Months 1976*—Motor vehicle factory sales from plants in the *United States* totaled 6,121,965 for the first half of 1976 against 4,187,608 from January-June 1975. The breakdown for the latest period is 4,578,654 passenger cars (up 1,453,313) and 1,543,311 trucks and buses (up 481,044). . . . Factory sales from plants in *Canada* totaled 894,810 through June 1976 against 730,836 through June 1975. [Motor Vehicle Manufacturers Association of the U.S., Inc., Detroit, Michigan]

## COPIES STILL AVAILABLE!

*RECOMMENDED WORK PRACTICES*—Five manuals published by the Asbestos Information Association/North America include: "Recommended Work Practices for the Fabrication and Use of Asbestos Paper Products," "Shop and Field Fabrication of Asbestos Sheet Products," "Molding and Fabrication of Asbestos Containing Plastic Products," "Fabrication and Use of Asbestos Friction Materials," and "Use and Handling of Asbestos Textile Products." [$1.35 each plus postage; order from AIA/NA or through ASBESTOS Magazine]

*ASBESTOS: A REMARKABLE MINERAL FIBER*—Reference book on asbestos by Marion S. Badollet; presents technical data on asbestos minerals and on the chemical, physical and optical properties of Chrysotile, Riebeckite, Anthophyllite and Tremolite; contains electron micrographs, thermal analyses and X-ray diffraction patterns. [$20.00 per copy; order from the author or through ASBESTOS Magazine]

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**International asbestos-cement review**




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# ENVIRONMENTAL ISSUES IN THE U.S.

## OSHA EVENTS

The U.S. Department of Labor has established a Task Force to assist the Occupational Safety and Health Administration in accelerating and extending its revision of general industry safety standards, to recommend clarification and simplification of existing standards and to eliminate rules that are redundant. After completion of its initial work, the Task Force will submit monthly reports to the Secretary of Labor who will, in turn, report progress to the President through the Executive Committee of the Economic Policy Board. Concern has been expressed of possible interference from the White House in the standards-setting mechanism. [AIA/NA]

OSHA has produced a one-hour orientation program to tell employees and employers what they should know about the Occupational Safety and Health Act of 1970. In addition to emphasizing rights and responsibilities, the narrated course covers OSHA standards, enforcement, citations, penalties, state and special programs, recordkeeping and voluntary compliance. Course materials include an instructor's manual, a set of 76 color slides and two audio cassettes.

"Employer Responsibilities and Courses of Action Following an OSHA Inspection" is the title of a new citation form and explanatory booklet issued by OSHA. Written in easy-to-read format, the booklet is OSHA's first effort to clearly and concisely describe the courses of action which can be followed by employees or their authorized representatives if they wish to contest an abatement date set by OSHA. It also explains what to do if employees wish to protest any discriminatory action taken against them for exercising their rights under the law. It presents all employer options as a result of an inspection and assures the employer of complete information when deciding whether to comply or contest.

The Commission on Federal Paperwork, created by Congress to investigate and recommend solutions to Federal paperwork problems, has issued 26 recommendations to OSHA, including that employers with less than 100 workers should not be required to keep a log of illnesses and injuries and that safety and health standards should be reviewed and modified, as necessary, i.e., to make recordkeeping requirements consistent in areas of application where differences cannot be justified and to eliminate recordkeeping requirements that have little or no impact on employee health and safety. Also recommended was that in co-

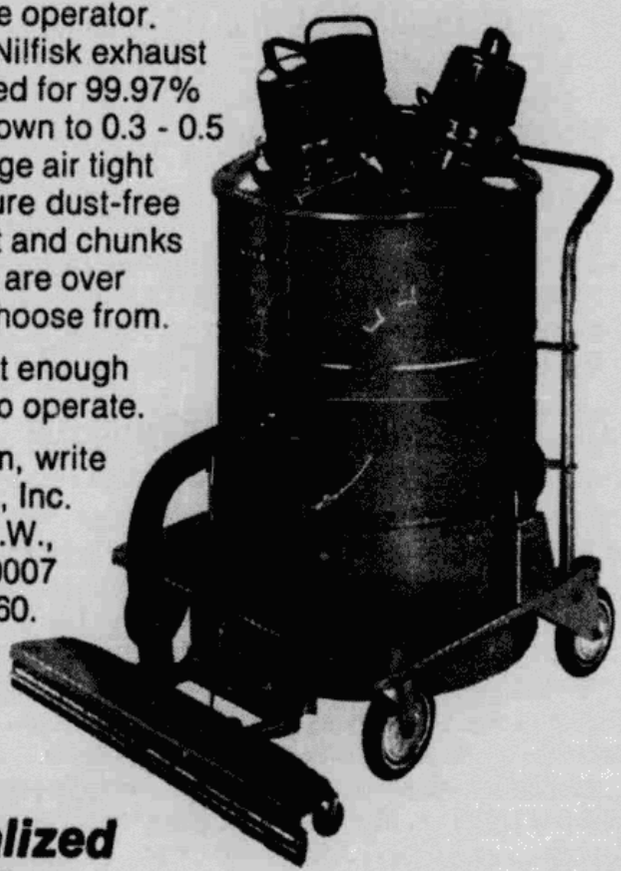


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# To meet clean air standards you not only need a centralized dust collector, you also need a decentralized dust collector.

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In addition special Nilfisk exhaust filters can be installed for 99.97% average retention down to 0.3 - 0.5 microns. Heavy gauge air tight container liners insure dust-free disposal of fine dust and chunks of debris. And there are over 50 attachments to choose from.



Yet the GA 73 is light enough for a single person to operate.

For more information, write to Nilfisk of America, Inc. 3244 Prospect St. N.W., Washington, D.C. 20007 or call (202) 338-9360.

**NILFISK GA 73.**

***The decentralized dust collector.***


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operation with the Department of Health, Education and Welfare, the Labor Secretary should study the problem of setting standards in work environments where hazardous substances co-exist and interact to determine if standards can be set for families of such substances in the interest of making data more useful and reducing recordkeeping burdens. [AIA/NA]

## EPA GUIDES, STUDIES & CITES

Under guidelines published in the Federal Register of May 25, the U.S. Environmental Protection Agency must compare potential health risks with potential economic impact before acting to control substances that are suspected of being carcinogens. EPA Administrator Russell Train believes that following the procedure will lessen health risks to the public and will avoid the burden of undesirable regulatory action. [AIA/NA]

A project recently begun at Research Triangle Park, North Carolina, calls for EPA to conduct a rat study on the possible carcinogenic effect by respiration of taconite ore particles from the mining pit of Reserve Mining Corporation. [AIA/NA]

Under the National Emission Standards for Hazardous Air Pollutants, EPA has cited two asbestos products manufacturers in Pennsylvania for failing to take proper measures to prevent public access to asbestos waste disposal piles. The companies were ordered by EPA to install a fence around the piles and to post warning signs at the sites. One of the firms was also cited for dust emissions at the waste pile from crushing waste asbestos pipe by a bulldozer. The firm was ordered to submit to the Agency plans for the prevention of visible emissions when crushing any asbestos material in the future.

## PREDICTIONS DID NOT MATERIALIZE

Predictions that shipyard employees who worked during the years of World War II and the Korean Conflict would now be experiencing an excess number of asbestos-related diseases have not materialized, according to recent statements made by Captain G. M. Lawton, of the Navy Bureau of Medicine and Surgery, and Captain T. N. Markham, of the Navy Environmental Health Center at Cincinnati, Ohio. Captains Lawton and Markham said that an excess of pulmonary tumors has not been observed, disease information in support of worker's compensation claims does not indicate widespread asbestos-related conditions and evidence indicates the mortality rate, in many instances, is below that of the civilian industrial setting. [AIA/NA]




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# ASBESTOS R & D

The Ontario Research Foundation has provided services to the asbestos industry on a fee or contract basis for the past 12 years. These services include:

- testing and evaluation of asbestos fibers at any stage of milling or processing;
- research and development on asbestos products such as asbestos cement, composites, textiles;
- environmental impact studies and industrial hygiene surveys of mines, mills and plants.

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# ONTARIO RESEARCH





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# PRODUCTION—IMPORTS—EXPORTS

## IMPORTS INTO THE UNITED STATES

From: U.S. Bureau of the Census

**UNMANUFACTURED ASBESTOS:** — **MAY 1976**

| | | | |
|---|---|---|---|
| Amosite | s.tons | .. | $ .. |
| Crocidolite (Blue), South Africa | s.tons | 672 | 370,687 |
| Chrysotile, Crudes, Canada | s.tons | 82 | 30,168 |
| Mexico | s.tons | 35 | 20,207 |
| Rhodesia | s.tons | 303 | 272,487 |
| South Africa | s.tons | 193 | 110,312 |
| United Kingdom | s.tons | 119 | 55,992 |
| Chrysotile, Spinning Fibers, Canada | s.tons | 309 | 290,008 |
| Chrysotile, Other, Canada | s.tons | 52,268 | 10,396,306 |
| Mexico | s.tons | 4 | 959 |
| South Africa | s.tons | 33 | 19,936 |
| Other Crudes & Fibers, Canada | s.tons | 1,866 | 281,578 |
| South Africa | s.tons | 428 | 175,906 |
| USSR | s.tons | 2,690 | 526,038 |
| | | 59,002 | $12,550,584 |

**MANUFACTURED ASBESTOS PRODUCTS:**

| | | | |
|---|---|---|---|
| Asbestos yarn, cloth, tape, etc. | Lb | 534,927 | $ 805,877 |
| A-C pipes, tubes & fittings | Lb | 687,361 | 72,329 |
| Other asbestos-cement articles | Lb | 1,464,791 | 306,525 |
| Other asbestos articles | | .. | 377,001 |
| | | | $ 1,561,732 |

**UNMANUFACTURED ASBESTOS:** — **JANUARY-MAY 1976**

| | | | |
|---|---|---|---|
| Amosite, Canada | s.tons | 20 | $ 469 |
| South Africa | s.tons | 1,151 | 503,663 |
| Crocidolite (Blue), South Africa | s.tons | 4,298 | 2,120,047 |
| Chrysotile, Crudes, Canada | s.tons | 289 | 125,175 |
| Mexico | s.tons | 234 | 125,486 |
| Rhodesia | s.tons | 819 | 813,475 |
| South Africa | s.tons | 193 | 110,312 |
| United Kingdom | s.tons | 119 | 55,992 |
| Chrysotile, Spinning Fibers, Canada | s.tons | 1,694 | 1,297,249 |
| Chrysotile, Other, Canada | s.tons | 244,447 | 48,763,120 |
| Germany, West | s.tons | 1,086 | 202,826 |
| Mexico | s.tons | 14 | 3,262 |
| South Africa | s.tons | 396 | 217,440 |



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# C-E Bauer Hurricanes



Processing more than half a million tons of fibres yearly

In the asbestos industry alone, more than 75 C-E Bauer Hurricane® Pulverizer-Classifier units are used to fiberize, to remove magnetite and rock, and to recover fibre from tailings that used to be discarded. They were specified by operators who need rugged, high capacity equipment for continuous, heavy duty service. (A 4½" diameter shaft that reduces maintenance is standard on new units.) Ask for Bulletin G-4. C-E Bauer, a division of the Process Equipment Group of Combustion Engineering, Inc., Springfield, Ohio 45501 and Brantford, Ontario.

PROCESS EQUIPMENT
COMBUSTION ENGINEERING, INC.





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U.S. IMPORTS—CONTINUED

| | | | |
|---|---|---|---|
| Other Crudes & Fibers, Canada | s.tons | 7,091 | 1,159,221 |
| Germany, West | s.tons | 823 | 179,840 |
| South Africa | s.tons | 1,261 | 545,863 |
| USSR | s.tons | 5,593 | 1,028,231 |
| | | 269,528 | $57,251,671 |

MANUFACTURED ASBESTOS PRODUCTS:

| | | | |
|---|---|---|---|
| Asbestos yarn, cloth, tape, etc. | Lb | 2,937,538 | $ 4,117,490 |
| A-C pipes, tubes & fittings | Lb | 2,212,549 | 233,190 |
| Other asbestos-cement articles | Lb | 6,787,460 | 1,124,106 |
| Other asbestos articles | | .. | 2,305,713 |
| | | | $ 7,780,499 |

## AUSTRALIAN IMPORTS & EXPORTS

For the *Year Ended June 1976*, Australia *imported* 56,246 metric tons of asbestos valued at A$17,852,927, ahead 5,367 tons and $6,657,528 over the previous year. The breakdown by variety of asbestos for the latest year is: Chrysotile, 31,345 tons (up 545 tons), $9,673,472; Amosite, 15,677 tons (up 3,398 tons), $5,431,491; Other, 9,224 tons (up 1,424 tons), $2,747,964. . . . *Exports* of all types of asbestos for the Year to June 1976 totaled 38,139 tons valued at $11,793,186, an increase of 22,199 tons and $8.1-million over the 12 months to June 1975. [Commonwealth Bureau of Census and Statistics, Canberra]

## CANADIAN FIBER SHIPMENTS

Primary Canadian Producers shipments of asbestos (including tonnage for own use) amounted to 139,311 short tons in *June 1976*, 66,684 tons more than in June 1975. The cumulative total for the *First Half of 1976* was 828,160 tons: 669,948 tons from Quebec plants and 158,212 tons from plants in Newfoundland, Ontario, British Columbia and the Yukon. The total for the first half of 1975 was 543,345 tons—410,245 tons from plants in Quebec and 133,100 tons from plants in the other four Provinces. [Statistics Canada, Ottawa]

## SOUTH AFRICAN OUTPUT & EXPORTS

*Production* of asbestos for the period *January-March 1976* totaled 80,413 metric tons, 5,438 tons less than in the first quarter of 1975. The breakdown for the latest three months is: 18,323 tons of Amosite, 330 tons of Anthophyllite (Tremolite), 36,408 tons of Cape Blue and 25,352 tons of Chrysotile. . . . *Exports* for the period January-March 1976 were valued at R19,082,303, ahead R1.8-million over the same period a year earlier. By variety of asbestos, the values for the latest period are: R4,759,218 for Amosite, R40,250 for Anthophyllite, R11,028,269 for Cape Blue and R3,254,566 for Chrysotile. [Department of Mines, Johannesburg]



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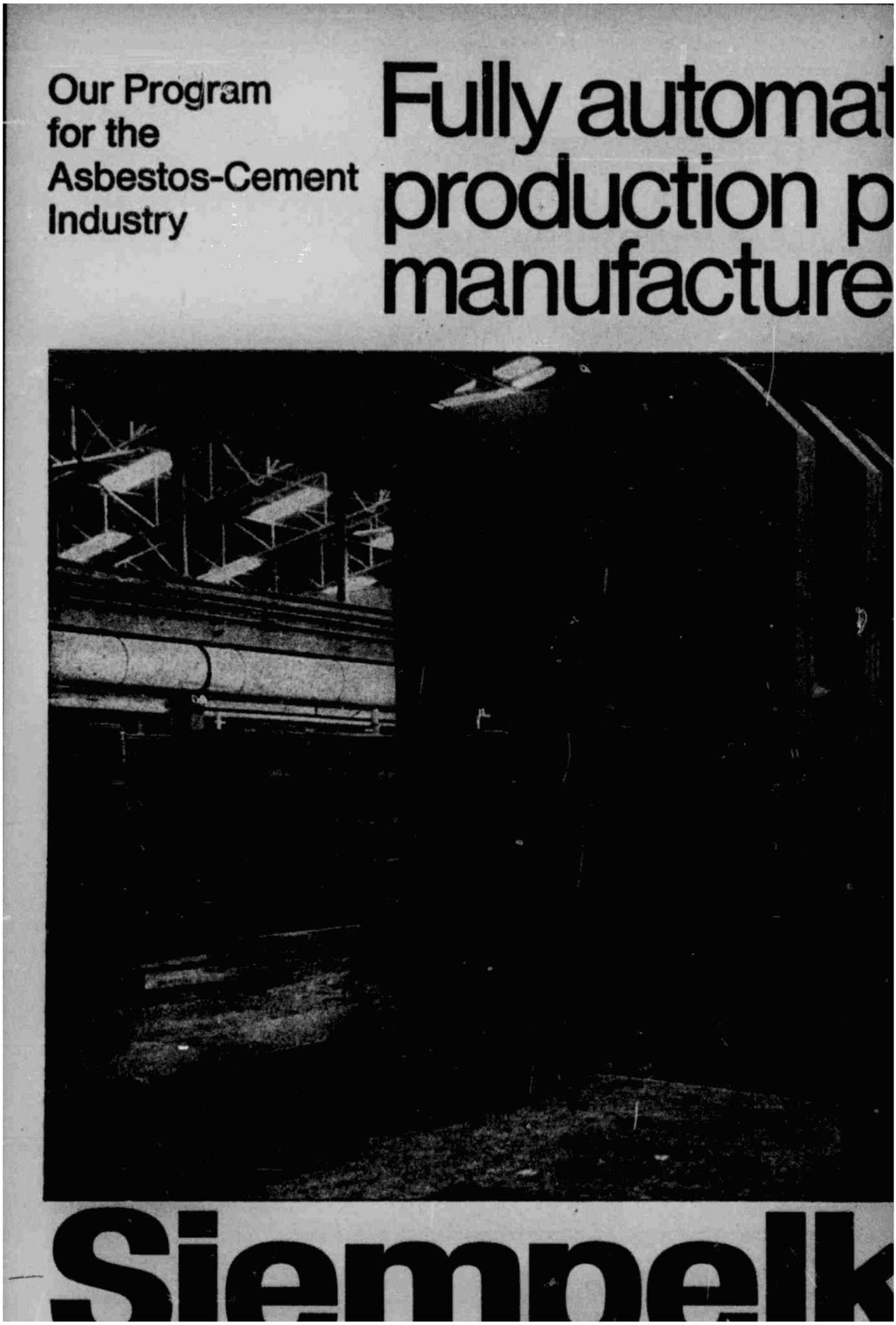




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Industry

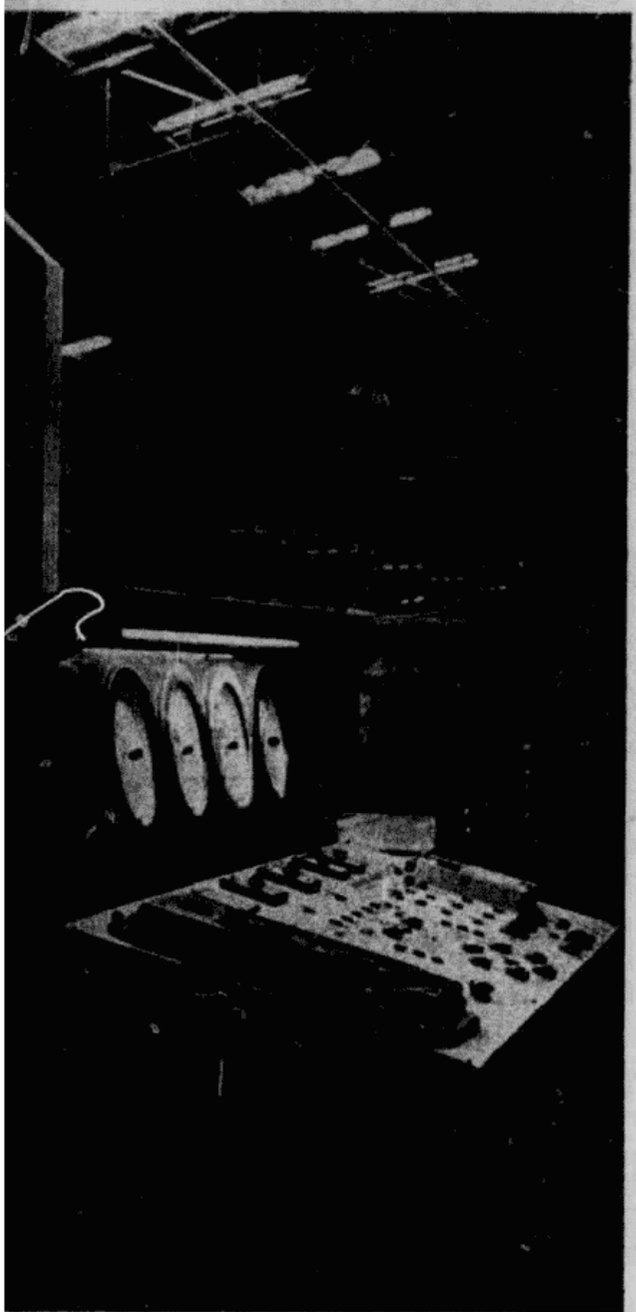
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D-415 Krefeld / Germany


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# EXPORTS FROM THE UNITED STATES

From: U.S. Bureau of the Census

**MAY 1976**

**UNMANUFACTURED ASBESTOS:**

| | | | |
|---|---|---|---|
| Fibers not further processed than beaten, washed or graded to length | s.tons | 2,015 | $ 789,663 |
| Waste and refuse | s.tons | 4,213 | 775,462 |
| | | 6,228 | 1,565,125 |

**MANUFACTURED ASBESTOS PRODUCTS:**

| | | | |
|---|---|---|---|
| A-C shingles & clapboard | Lb | 1,640,982 | $ 334,441 |
| Other a-c fiber-cement articles | Lb | 1,146,586 | 256,963 |
| Gaskets | Lb | 38,650 | 113,297 |
| Packing | Lb | 197,689 | 518,118 |
| Heat or sound insulation | | .. | 597,936 |
| Textiles & yarns | Lb | 1,549,433 | 569,137 |
| Protective clothing | | .. | 105,593 |
| Mfrs. other than friction materials | | .. | 1,622,181 |
| Clutch facings & linings for auto. use | No | 73,867 | 109,286 |
| Other clutch facings & linings | No | 3,880 | 6,583 |
| Brake linings for automotive use | Lb | 894,598 | 734,450 |
| Other brake linings | Lb | 276,676 | 299,659 |
| | | | $ 5,267,644 |

**JANUARY-MAY 1976**

**UNMANUFACTURED ASBESTOS:**

| | | | |
|---|---|---|---|
| Fibers not further processed than beaten, washed or graded to length | s.tons | 10,063 | $ 3,170,277 |
| Waste and refuse | s.tons | 12,932 | 2,811,590 |
| | | 22,995 | $ 5,981,867 |

**MANUFACTURED ASBESTOS PRODUCTS:**

| | | | |
|---|---|---|---|
| A-C shingles & clapboard | Lb | 12,325,816 | $ 2,040,792 |
| Other a-c fiber-cement articles | Lb | 9,395,171 | 1,840,264 |
| Gaskets | Lb | 321,347 | 658,113 |
| Packing | Lb | 1,590,765 | 3,581,984 |
| Heat or sound insulation | | .. | 1,804,251 |
| Textiles & yarns | Lb | 5,822,436 | 2,685,388 |
| Protective clothing | | .. | 421,267 |
| Mfrs. other than friction materials | | .. | 5,409,319 |
| Clutch facings & linings for auto. use | No | 286,227 | 480,866 |
| Other clutch facings & linings | No | 96,306 | 77,246 |
| Brake linings for automotive use | Lb | 4,379,611 | 3,682,278 |
| Other brake linings | Lb | 1,027,163 | 1,079,779 |
| | | | $23,761,547 |



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# ASBESTOS

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# KILBORN





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# EXPORTS FROM CANADA

From: Statistics Canada

**MAY 1976**
Short Tons

| UNMANUFACTURED ASBESTOS: | Crude | Milled Gp 3 | Milled Gp 4&5 | Shorts Gp 6-9 |
|---|---|---|---|---|
| Western Europe | 10 | 891 | 25,239 | 18,719 |
| Eastern Europe | .. | 50 | 1,322 | 121 |
| Middle East | .. | .. | 1,829 | 190 |
| Africa | .. | .. | 620 | 460 |
| Asia | .. | 225 | 10,556 | 12,906 |
| Oceania | .. | .. | 3,887 | 511 |
| So. & Cen. America & Antilles | .. | 232 | 8,898 | 2,616 |
| United States | .. | 384 | 12,735 | 45,393 |
| | 10 | 1,782 | 65,086 | 80,916 |

The total amount of unmanufactured asbestos exported in *May 1976* was 147,794 short tons, valued at $42,029,000.

**MANUFACTURED ASBESTOS PRODUCTS:**

| | |
|---|---|
| Asbestos cloth, dryer felts & sheets | $ 225,000 |
| Asbestos brake linings & facings | 88,000 |
| Asbestos-Cement building materials | 939,000 |
| Other basic asbestos products | 321,000 |
| | $1,573,000 |

**JANUARY-MAY 1976**

| UNMANUFACTURED ASBESTOS: | Crude | Milled Gp 3 | Milled Gp 4&5 | Shorts Gp 6-9 |
|---|---|---|---|---|
| Western Europe | 10 | 4,616 | 116,065 | 75,778 |
| Eastern Europe | .. | 444 | 6,749 | 863 |
| Middle East | .. | 215 | 6,330 | 2,647 |
| Africa | .. | .. | 3,421 | 3,139 |
| Asia | .. | 568 | 37,959 | 55,714 |
| Oceania | .. | 5 | 19,682 | 2,883 |
| So. & Cen. America & Antilles | .. | 1,026 | 35,084 | 14,399 |
| United States | 20 | 2,593 | 59,877 | 193,427 |
| | 30 | 9,467 | 285,167 | 348,850 |

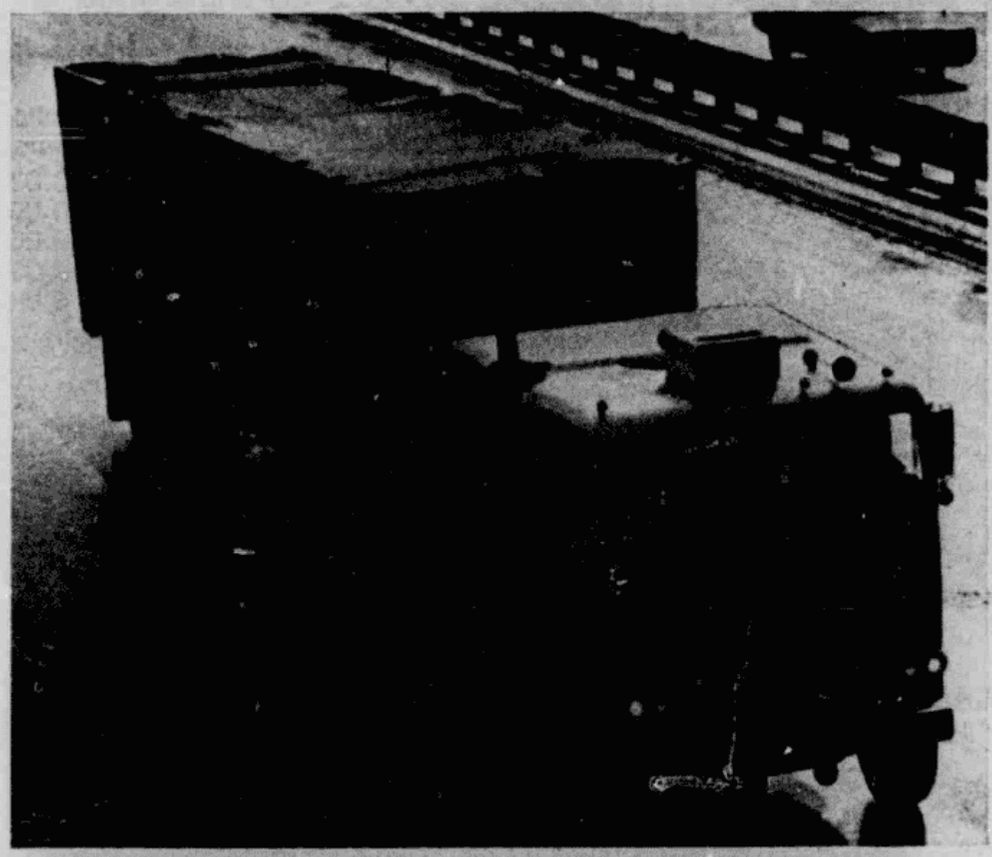
The total amount of unmanufactured asbestos exported in *January-May 1976* was 643,514 short tons, valued at $183,582,000.

**MANUFACTURED ASBESTOS PRODUCTS:**

| | |
|---|---|
| Asbestos cloth, dryer felts & sheets | $1,082,000 |
| Asbestos brake linings & facings | 666,000 |
| Asbestos-Cement building materials | 3,262,000 |
| Other basic asbestos products | 1,087,000 |
| | $6,097,000 |



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# Stop 'em in their tracks.

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**LAKE ASBESTOS**

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# LATEST ASBESTOS PRICES

**ARIZONA** — *Per Ton of 2000 Lbs., F.O.B. Globe, Arizona*
*As of July 1, 1976* — *U.S. Dollars*

| | | |
|---|---|---|
| No. 1 Crude (Soft) | $ .. | $3000.00 |
| No. 2 Crude (Soft) | .. | 1800.00 |
| AAA | .. | 1300.00 |
| Group No. 3—Nonferrous Filtering—Plastic | 750.00— | 840.00 |
| Group No. 4—Nonferrous Filtering—Plastic | 750.00— | 840.00 |
| Group No. 7—White Shorts | 100.00— | 200.00 |

**QUEBEC** — *Per Ton of 2000 Lbs., F.O.B. Mine*
*As of December 1, 1975* — *Canadian Dollars*

| | | |
|---|---|---|
| No. 1—Crude | $ .. | $3496.00 |
| No. 2—Crude | .. | 1899.00 |
| No. 3—Spinning Fiber | 891.00— | 1463.00 |
| No. 4—Asbestos Cement Fiber | 492.00— | 829.00 |
| No. 5—Paper Fiber | 278.00— | 392.00 |
| No. 6—Paper and Shingle Fiber | 236.00— | 244.00 |
| No. 7—Shorts | 89.00— | 198.00 |

**CASSIAR** — *Per Ton of 2000 Lbs., F.O.B. North Vancouver, B.C.*
*As of January 1, 1976* — *Canadian Dollars*

| | | |
|---|---|---|
| | *Cassiar Mine* | |
| C-1 | | $3149.00 |
| AAA | Grade—Nonferrous Spinning Fiber/Canadian Group 3 | 1820.00 |
| AA | Grade—Nonferrous Spinning Fiber/Canadian Group 3 | 1447.00 |
| A | Grade—Nonferrous Spinning Fiber/Canadian Group 3 | 1102.00 |
| AC | Grade—Nonferrous Spinning Fiber/Canadian Group 3 | 794.00 |
| AK | Grade—Asbestos Cement Fiber/Canadian Group 4 | 566.00 |
| AS | Grade—Asbestos Cement Fiber/Canadian Group 4 | 490.00 |
| AX | Grade—Asbestos Cement Fiber/Canadian Group 5 | 449.00 |
| AY | Grade—Asbestos Cement Fiber/Canadian Group 5 | 315.00 |
| AZ | Grade—Asbestos Cement Fiber/Canadian Group 6 | 233.00 |
| | *Clinton Mine* | |
| CP | Grade—Asbestos Cement Fiber/Canadian Group 4 | 531.00 |
| CT | Grade—Asbestos Cement Fiber/Canadian Group 4 | 481.00 |
| CY | Grade—Asbestos Cement Fiber/Canadian Group 5 | 315.00 |
| CZ | Grade—Asbestos Cement Fiber/Canadian Group 6 | 233.00 |

**VERMONT** — *Per Ton of 2000 Lbs., F.O.B. Morrisville, Vermont*
*As of January 1, 1976* — *U.S. Dollars*

| | | |
|---|---|---|
| Grade 4T—Fiber | $ ..— | $ 418.00 |
| Grades 5D thru 5R—Fiber | 275.00— | 324.00 |
| Grade 6D—Waste | ..— | 200.00 |
| Grades 7D thru 7T—Shorts | 83.00— | 160.00 |
| Grade 7TF—Floats (Shorts) | ..— | 72.00 |
| Grade 8S—Shorts | ..— | 54.00 |
| Hooker No. 1—in 50-lb. woven poly bags/*eff. 12/1/75* | | 970.00 |
| Hooker No. 2—in 100-lb. woven poly bags/*eff. 12/1/75* | | 485.00 |



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# 60 YEARS OF EXPERIENCE

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Plants for the manufacture of corrugated and flat sheets.

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# MINERAL FACTS & PROBLEMS 1975

**(Excerpts from the Asbestos Chapter of "Mineral Facts and Problems, 1975 Edition," authored by R. A. Clifton and issued by the Bureau of Mines, U.S. Department of the Interior.)**

## ASBESTOS VARIETIES

Asbestos is a name applied to a group of naturally-fibrous minerals, the principal variety of which is Chrysotile, a hydrous magnesium silicate. Other commercial varieties are Amosite, a complex iron magnesium silicate, and Crocidolite, a sodium-iron hydrous silicate. Of minor importance are Tremolite and Anthophyllite.

Chrysotile, the main commercially-used variety, is graded and grouped according to fiber length. Most of the groups are divided into several sub-groups to comprise the commercial specifications. One producer alone offers to its customers 420 grades of fibers in 1,320 different forms. For some uses the chemical composition is important. Thus, for electrical insulation an upper limit for the iron content may be specified.

## USES FOR ASBESTOS

Asbestos is adaptable to over 2,000 uses. Because of its high strength-to-weight ratio and resistance to searing temperatures, it has several important applications in rockets and missiles.

World end-use patterns are not discernible from available data and projections of U.S. patterns to the rest of the world cannot be justified. In 1970 it was reported in "Industrial Minerals" magazine that 70% of the world's asbestos was connected with products used in the construction industry. This still seems reasonable and can be used for planning purposes. Asbestos products manufacturing plants in the United States are located in 16 States, principally in the southeast and along the West Coast.

Processed Chrysotile asbestos fibers are placed into seven groupings, based on length of fiber. Groups 1, 2 and 3 are composed of the longest fibers. Major end uses are in textiles, clothing, theatre curtains, packings, woven brake linings, clutch facings, electrical insulation and high-pressure and marine insulation. The major use for Group 4 fibers is in asbestos-cement pipe in municipal water works, and in irrigation and conservation projects. Fibers that fall in Group 5 are used in a/c sheets, flat and corrugated sheets, low-pressure a/c pipes, molded products, and in some paper products such as pipe insulation, wrappings, brake linings and gaskets. The main consumption of Group 6 is in a/c mixes, gaskets, brake linings, vinyl sheet packings and millboard. Group 7 is used in molded brake linings and clutch facings, as a filler in vinyl and asphalt floor tile, in asphalt compounds and in joint and insulating cements, roof coatings, plastics and caulking compounds.



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# THE MINING SCENE

## DOYON & ASARCO DRILLING IN ALASKA

*Doyon Ltd.*, a Native Regional Corporation headquartered in Fairbanks, Alaska, has entered into a lease/partnership agreement with *Asarco Inc.* According to various new reports, the agreement involves the possible mining of asbestos at a deposit located about 50 miles southwest of the Alaskan native village of Eagle, 60 miles due west of the now-producing Clinton Mine in the Yukon Territory of Canada. (Cassiar Asbestos Corporation Ltd. expects to close the Clinton Mine sometime in 1978 when ore reserves will have been depleted.) An exposed outcrop of asbestos-bearing serpentine rock shows good quality fiber at the surface and a drilling program has already commenced on the property. Doyon and Asarco are partners through *Tanana Asbestos Corporation*, a newly-created subsidiary of Doyon. . . . Doyon Ltd. was created in 1972 and ranks in the top 125 U.S. corporations. Its holdings include 12-million acres of land worth at least $1.2-billion. The firm is involved in oil and natural-gas drilling and in general mining ventures. All of its 9,200 stockholders are natives of Alaska, mostly Athabascan Indians, plus a few Eskimos and Aleuts.

## $77-MILLION APPROVED FOR J-M JEFFREY MINE

The Board of Directors of *Johns-Manville Corporation* has approved $77-million in capital expenditures to be used over a five year period to assure continuation of a high level supply of asbestos fiber from the Jeffrey Mine at Asbestos, Quebec. The initial $12.5-million to be spent in 1976 will represent Phase One of the program and will include the purchase of surrounding property and construction of engineering and repair and other mine facilities. In 1974 JM had completed a $74-million capital expenditure program at the Jeffrey Mine which resulted in improved cost control and increased production.

## SHIELD/TALISMAN EXPLORING NEAR TIMMINS

*The Shield Development Co. Ltd.* is diamond drilling on its recently-optioned asbestos property in the Rush Lake-Horwood Lake region in Newton Township, Northern Ontario, 12 miles southwest of Timmins. Ten exploratory holes are to be drilled in the first phase of the program, with the initial hole slated to go 550-600 feet deep. Additional ground is being staked to the west. Shield is to spend $240,000 in exploration work to earn a 50% interest in the project, a joint venture with *Talisman Mines Ltd.*

**THE COVER:** The photograph on the left is a cross section of Chrysotile asbestos fibers from the Transvaal, Republic of South Africa, taken at 100 kv X 1,050,000. The picture on the right is a cross section of Chrysotile fibers from Coalinga, California, taken at 100 kv X 1,200,000. Photographs supplied through the courtesy of Professor Keiji Yada, Research Institute for Scientific Measurements, Tohoku University, Sendai, Japan.

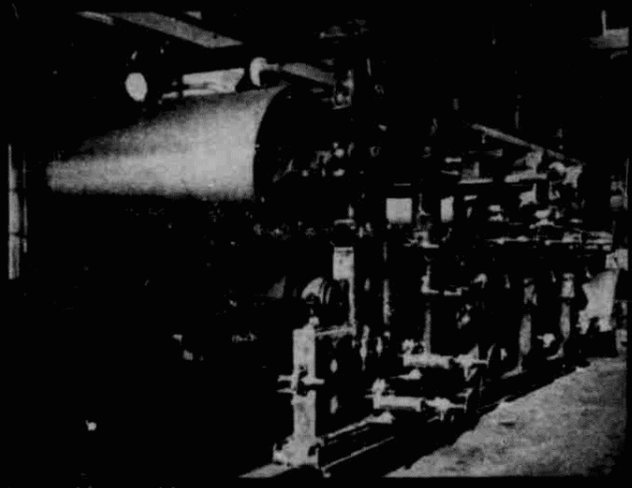


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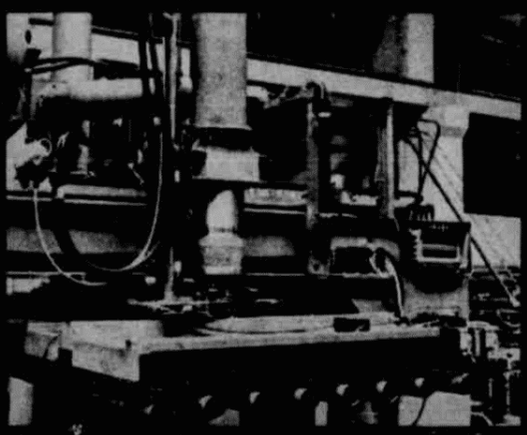
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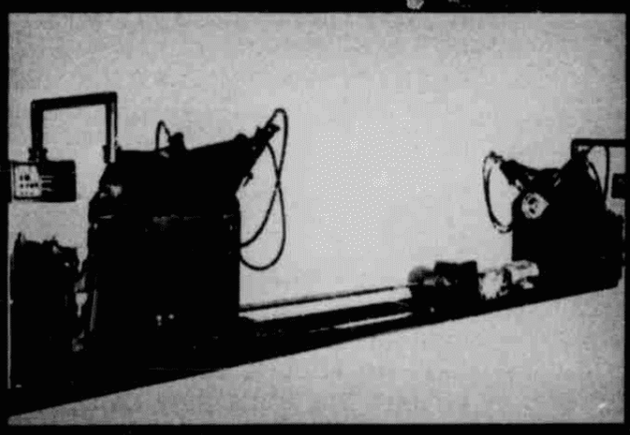
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## T&N BUYS RUSSIAN FIBER

*Turners Asbestos Fibres Ltd.*, a Turner & Newall company, is to receive 800 metric tons of Russian asbestos fiber this year, valued at about £150,000, for use at factories of *TAC Construction Products Ltd.* The hope is to sign a long-term agreement covering a considerably greater quantity of fiber over the next 3-5 years. The material is to help offset the declining supply from Cassiar's Clinton Mine.

## WOODSREEF RECOVERING

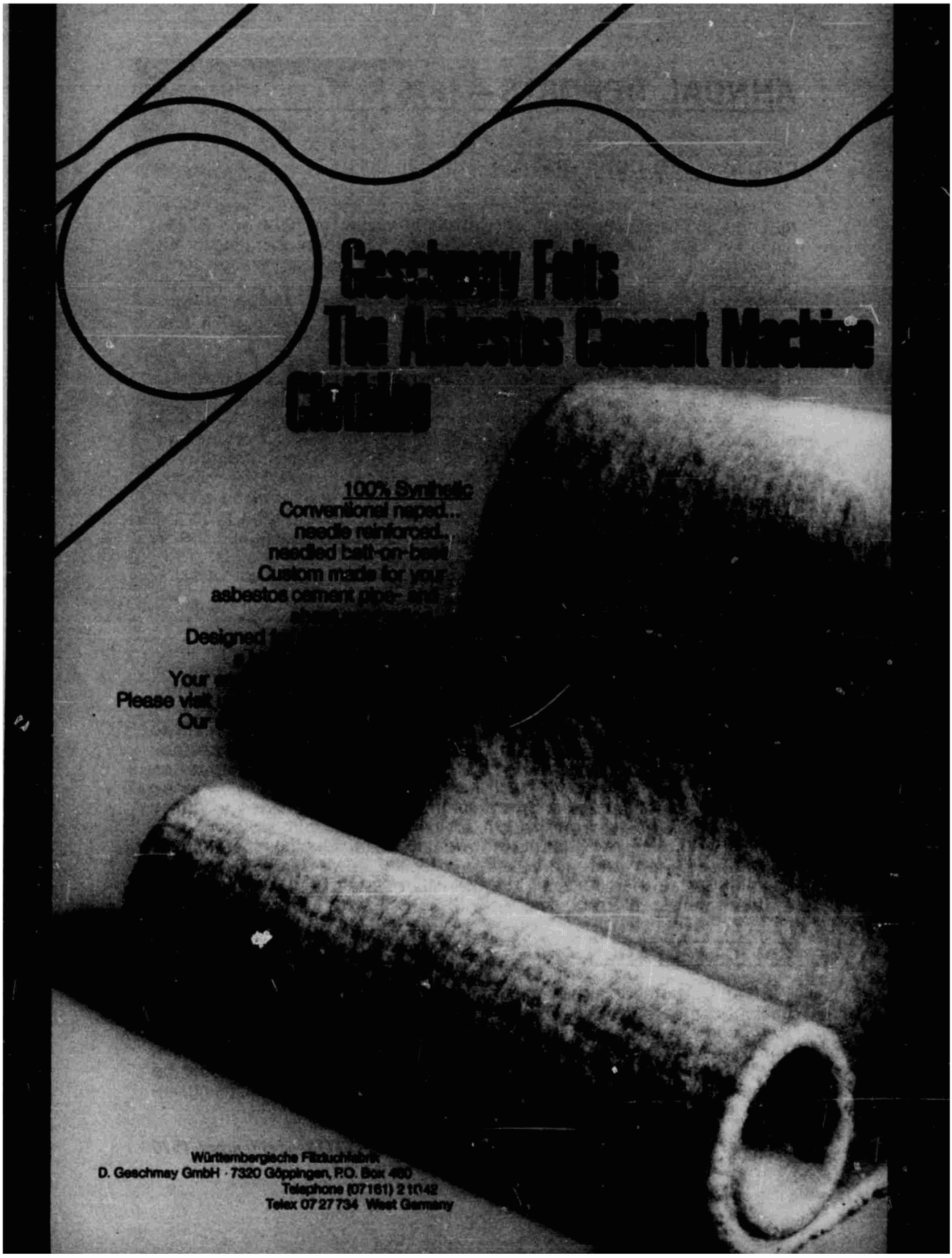
With an improvement in operations and finances, *Woodsreef Mines Ltd.* is now talking seriously with stockbrokers and financiers about a major move to refinance the mining venture, pay creditors in full and bring the main operating subsidiary out of receivership. About A$18-million in new funds would be needed, hopefully with the majority via a long-term debt. At the same time it was hoped to maintain shareholders equity, although a capital reconstruction would almost certainly be needed. . . . The Commercial Bank of Australia has advanced funds to permit an expansion of the rock lines in the mill from the existing six to eight which should lift annual production capacity to about 95,000 metric tons of fiber toward the end of this year. This expansion was provided for in the original mill design and can be achieved at relatively small cost. Treatment problems which originally bugged the operation have gradually been ironed out and some new machinery has been developed. One of these items now used extensively at the mill serves to reduce fiber losses by breaking down the electrostatic adherence of fiber to host rock after crushing. [The Northern Miner]

## MINES BUREAU SAFETY DEVELOPMENTS

Two techniques for warning of underground stresses that could lead to outbursts of flying rock or coal fragments in mine passages have been developed by the Bureau of Mines and are now ready for commercial use. Rockbursts occur when pillars or walls in deep mines are stressed beyond the limits they can withstand. The result is a violent release of energy, with an outburst of flying rock fragments. One of the newly-developed techniques is a rockburst monitoring system; the other a device for remotely reading stress changes that could warn of impending failure in mine pillars. The sending elements of the rockburst monitoring system are geophones which are positioned in planned groups and linked to a computer that is programmed to pinpoint the origin of small-scale displacements. These displacements, or microseismic events, create minute noises with intensities and frequencies that can signal dangerously-high stresses. The system identifies zones where high stresses can be relieved by detonating explosive charges in strategic locations.



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# ANNUAL REPORTS—1975

## CERTAINTEED CORPORATION

Net sales reported by CertainTeed Corporation for the year 1975 reached $553-million, compared with $559-million in 1974 and $328-million in 1971. Although net sales declined 1%, group operating profit increased 22% over 1974 to over $70-million, the highest in the company's history. Net income was $19.5-million in 1975 against a net loss in 1974 of $7.4-million and a net income in 1971 of $15.1-million. Net income per common share was $1.36 in 1975, minus 70¢ in 1974 and $1.52 in 1971.

*Industrial and Building Products*—This group includes the manufacture and/or marketing of roofing and insulation products, ceiling panels and vinyl siding. Sales and profits of asphalt roofing products and of insulation materials reached record levels in 1975. For asphalt roofing, sales of $157-million exceeded 1974 by 9% and operating profits rose 29%. Sales of insulation materials were valued at $159-million, up 12% over 1974, due primarily to strong re-insulation demand and to increased industrial requirements. Because of a reactivation program announced in November, CertainTeed will make and market a full line of versatile continuous-strand, fiber-glass-reinforcement products. Production will utilize technology developed by Compagnie de Saint-Gobain-Pont-a-Mousson, a recognized world leader in glass and fiber glass technology.

*Piping Systems*—Markets in 1975 for pipe and related products were seriously depressed due to low levels of new construction and reduced expenditures for water and sewer systems for municipalities. Anticipated projects for upgrading waste-water treatment plants under the federally-funded EPA Program did not materialize. Interestingly enough, profitability of PVC pipe operations declined precipitously but asbestos-cement pipe performance remained strong despite significantly lower sales. Although demand for a/c pipe dropped about one-third, manufacturing cost reductions and improvements in mix managed to offset raw materials cost increases preserving profit margins. Strong performance was achieved at the corrugated plastic tubing operation of CertainTeed/Daymond and at the a/c facility in Mexico of Productos Mexalit. CertainTeed holds a 50% interest in CertainTeed/Daymond and a 49% interest in Productos Mexalit.

## GAF CORPORATION

GAF Corporation achieved a record high in sales for 1975 of $964.4-million, compared with $948.8-million in 1974 and $592-million in 1969. Net income was $30.9-million, against $28.5-million (restated) in 1974 and $11.1-million in 1969. Net income per comon share was $2.06 in 1975, $1.84 in 1974 and 54¢ in 1969. The overall results should be viewed in light of the powerful economic forces and continuing in-



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▲ Press for water pressure test
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Pipe length max. 6000 mm

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flationary trends that affected GAF's domestic and international markets, resulting in reduced volumes of products. Markets demand generally took a turn for the better by the third quarter because of greater availability of capital, declining interest rates and an increase in business and consumer confidence.

Construction now underway and scheduled for completion in 1977 includes a $30-million sheet vinyl flooring plant in Mullingar, Ireland, and a 60-million-pound-per-year butanediol plant in Marl, West Germany, the latter the result of a joint venture between GAF and Chemische Werke Hüls, AG. In October GAF entered the hard plastics market with the introduction of Gafite, its brand of polybutylene terephthalate (PBT). To help meet the expected demand for the product, GAF will build a Gafite resin manufacturing plant at its chemical complex in Calvert City, Kentucky.

*Building Materials*—Group net sales reached $372.3-million in 1975 compared with $360.6-million the previous year and direct operating profit (excluding unallocated Corporate expenses) was $48.8-million in 1975 against a restated $43.5-million in 1974. The year 1975 was one of record high results for GAF building materials with worldwide sales up 3% and direct operating profit up 12%. The principal source of strength was in the rapidly-growing area of renovation and remodeling, specifically the re-roofing, re-siding and re-flooring markets. Thirteen new distribution points were established for flooring products during the year and building products sales were increased to numerous mass merchandising outlets in the U.S. An effective noise-control system was designed by GAF which combines vinyl-asbestos floor tile with a special underlayment. The product is most suitable for commercial use in apartment buildings, hospitals and nursing homes.

## MSAULI ASBES LTD.

Fiber sales in 1975 for Msauli Asbes Ltd. rose R4.5-million to R10,769,000 and consolidated net income reached R3,603,000 against R801,000 in 1974. Net assets of the Group amounted to R8,217,000 at the end of 1975 compared with R5.7-million at year-end 1974. The improvement in net income was attributed to a marked increase in production and sales, a curb on cost increases through higher productivity, improved fiber prices caused by a worldwide demand/supply situation and by the devaluation of the Rand. Production problems in the Canadian asbestos industry created a vacuum mainly in the Far East, Europe and the Middle East which enabled Msauli to establish fiber markets in previously untapped areas.

Msauli is a mining financial company and owns the entire issued share capital in African Chrysolite Asbestos Ltd. which, in turn, sells the fiber produced at the Msauli Mine situated in the Barberton District of the Transvaal, South Africa. Msauli disposed of its entire interest in the dor-



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mant subsidiary company, Msauli Krisotielasbes Beperk. General Mining and Finance Corporation Ltd. renders administrative, secretarial and technical services to the Group.

Capital expenditures in 1975 amounted to R307,000, were R407,000 in 1974 and are planned at about R1.8-million in 1976—for costs pertaining to the installation of pressure packing equipment, an additional milling plant, shaft deepening and development work to continue mining at lower levels.

*The Msauli Mine*—At 83,936 tons of fiber, the company produced approximately 15,000 tons more than in 1974. Income per ton of fiber was R131.50 in 1975 against R89.40 in 1974. Since only underground mining is now taking place, a greater degree of ore grade stability is being achieved. Fiber production has increased significantly for the second year in succession; the increases were 22% in 1975, 49% for the past two years and 97% over the past three years. The current climate of the market prompts the planning of further increases in production, optimum use of production facilities and a partial extension of the plant at Barberton. Although Msauli has sufficient ore reserves for the foreseeable future, it expects to intensify prospecting for additional ore in the adjacent area.

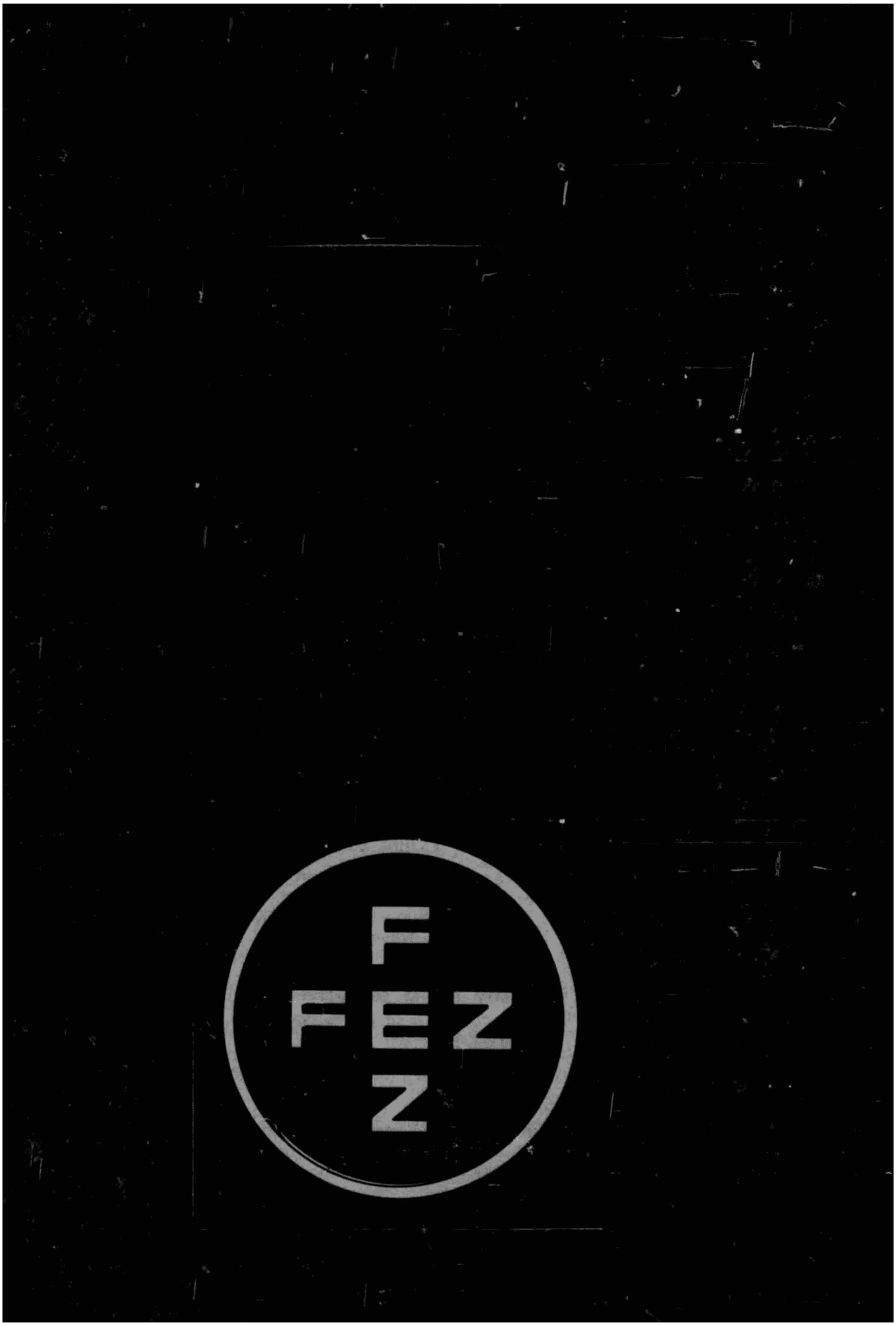
# ASBESTOS STOCK QUOTATIONS

***Close—August 17, 1976***

| | | | |
|---|---|---|---|
| Abitibi Asbestos | C$.91 | G&W (pfd 2.50) | 43 3/8 |
| Advocate Mines | C$2.75 | G&W (pfd 3.87) | 92 3/4 |
| Armstrong Cork | 26 7/8 | G&W (pfd 5.75) | 70 3/4 |
| Armst. Cork (pfd 3.75) | 50 | IC Industries | 20 5/8 |
| Asarco | 16 7/8 | IC Ind (pfd 6) | 92 |
| Asbestos Corporation | C$33.00 | IC Ind (pfd 3.50) | 41 3/4 |
| Bendix | 41 5/8 | Jim Walter Corporation | 30 |
| Bendix (pfd 3) | 84 | Jim Walter (pfd 1) | 12 1/8 |
| Carlisle | 15 | Jim Walter (pfd 1.60) | 33 3/4 |
| Cassiar Asbestos | C$6.375 | Johns-Manville | 29 3/4 |
| CertainTeed | 16 5/8 | Kennecott Copper | 32 |
| Charter Conso | pence 128 | Maremont | 18 1/8 |
| Colt Industries | 54 3/8 | McAdam Mining | C$.36 |
| Colt Ind. (pfd 1.60) | 29 | National Gypsum | 14 3/4 |
| Colt Ind. (pfd 4.25) | 76 1/2 | Pathfinder | C$.34 |
| Conwest | C$3.35 | Porter, H. K. (pfd 5.50) | 68 3/8 |
| Flintkote | 20 1/8 | Raybestos-Manhattan | 31 3/4 |
| F-kote (pfd-A 4.50) | 58 5/8 | Rio Algom | C$34.50 |
| F-kote (pfd-B 2.25) | 29 1/4 | Royal Industries | 7 3/4 |
| GAF Corporation | 15 1/8 | Supradur | Bid 4 5/8 ; Asker [illegible] |
| GAF (pfd 1.20) | 20 5/8 | Union Carbide | [illegible] |
| Gulf & Western | 19 | United Asbestos Inc. | 4 3/16 |
| G&W (warrants) | 4 3/4 | Woodsreef Minerals | C$.89 |



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# BIRTHDAY GREETINGS to . . .

*Norman Visnes*, Vice President-Mining, Asarco Inc., New York City, October 16.

*Frances E. Mett*, President & Treasurer, Powhatan Mining Company, Baltimore, Maryland, October 18.

*J. G. Mooney*, Industrial Relations Manager, Asbestos Corporation Ltd., Montreal, Quebec, October 18.

*R. B. Draper*, Managing Director, Trist, Draper Ltd., Bristol, Brislington, England, October 20.

*Monroe Harris*, Senior Vice President, Mining Group, Johns-Manville Corporation, Denver, Colorado, October 22.

*William M. North*, Chairman & Chief Executive Officer, National Gypsum Company, Buffalo, New York, October 22.

*James H. Plummer*, President, Pars Manufacturing Company, Ambler, Pennsylvania, October 22.

*L. B. Petters*, Chairman, Turnall Ltd., Jacobs, Durban, Natal, Republic of South Africa, October 27.

*H. C. Morton*, Senior Staff Engineer, Automotive Control Systems Group, The Bendix Corporation, Troy, New York, October 28.

*J. R. Sim*, a Director, Cape Industries Ltd., London, England, October 30.

*A. T. Reid*, a Director, James Hardie Asbestos Ltd., Sydney, New South Wales, Australia, October 31.

*Milton Q. Scowcroft*, Director-Textile Group, Raybestos-Manhattan Industrial Products Co., N. Charleston, S. Carolina, November 3.

*L. G. Stopford Sackville*, Deputy Chairman, Cape Industries Ltd., London, England, November 4.

*William Maaskant*, Sales Service Manager, Amatex Corporation, Norristown, Pennsylvania, November 5.

*Dirk Salomons*, Director & President of the Board, Asbest-cement-industrie Asbestona N.V., Harderwijk, Holland, November 5.

*Dr. Robert J. Merrill*, President & Chief Operating Officer, United Asbestos Inc., Montreal, Quebec, November 6.

*Melvin Berlund*, Superintendent, Atlas Asbestos Company, Coalinga, California, November 9.

*Richard Gaze, Ph.D.*, a Director, Cape Industries Ltd., London, England, November 9.

*Richard O. Moebius*, Textile Mill Superintendent, RM Friction Products Co., Manheim, Pennsylvania, November 10.

*Monte C. Carpenter*, President & Chief Operating Officer, The Flintkote Company, Stamford, Connecticut, November 12.

*Willis G. Sullivan*, Secretary, A & M. Insulation Company, Chicago, Illinois, November 12.

*William B. Callan*, General Manager-Thetford Operations, Asbestos Corporation Ltd., Thetford Mines, Quebec, November 14.

*K. H. Dixon*, Deputy Chairman, TBA Industrial Products Ltd., Spotland, Rochdale, Lancashire, England, November 14.

*Dr. Karl V. Lindell*, President, Karl V. Lindell Associates Ltd., Danville, Quebec, November 14.

*George L. Romine*, Vice President-Abex & President, Friction Products Group, Abex Corporation, New York City, November 14.



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## M. F. HOWE—RETIRED

*Michael F. Howe* retired on June 30, 1976, after 38 years of service with the Turner & Newall Group. He had been Managing Director of Turners Asbestos Fibres Ltd. and a former Director of TBA Industrial Products Ltd. He also had been Deputy Chairman of the U.K. Asbestos Information Committee since 1968.

Mr. Howe joined Turner Brothers Asbestos Ltd. (now TBA) in 1938, became Home Sales Manager in 1952 and Home Sales Director in 1953, responsible for sales of asbestos textiles, belting and sealing materials. In January 1963 he joined Raw Asbestos Distributors Ltd. as Acting Managing Director and later that year, after the firm's name changed to Turners Asbestos Fibres Ltd., he became Managing Director.

Mr. Howe joined the Asbestos Information Committee in 1968, a year after its formation, and was immediately appointed its Deputy Chairman. The next year he became Chairman of AIC's Executive Sub-Committee. From then until his retirement, he has served as liaison with other groups concerned with asbestos, encouraging the formation of several information organizations, including the Asbestos Information Association/North America, and promoting collaboration between existing organizations. He was Chairman of the first full International Conference of Asbestos Information Associations, held in London in 1971.


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# VALUABLE LITERATURE

*ASBESTOS/CHARACTERISTICS, APPLICATIONS & ALTERNATIVES*—An independent and comprehensive review of asbestos consumption in the United Kingdom, compiled by A. K. Green and A. M. Pye of Fulmer Research Institute, Slough, England; includes sections on the properties of commonly-occurring varieties of asbestos, associated health hazards, European legislation and health risks related to suitable substitute materials; for each asbestos product several alternative materials are discussed, the suitability of each of which depends upon the particular end use; among the asbestos applications considered are asbestos-cement products, insulation boards, textiles, friction materials, jointings and packings, millboard and composites; the report shows that for certain uses there is no satisfactory alternative to asbestos and that a cost-penalty is often associated with the replacement of asbestos products; the publication will be exhibited at the Fulmer Stand during the Materials Show, Cleveland, Ohio, October 26-28. [Fulmer Special Report No. 5; 32 pages; £25.00 (US$60.00); from FRI]

*1976-77 CANADIAN MINES HANDBOOK*—Pinpoints developments in the Canadian Mining Industry in 1976; details the property holdings and progress of over 4,000 Canadian mining firms; gives company addresses, names of officers and directors, financial status, present and future operating programs and capitalization; includes statistical tables concerned with production, exports, prices, and earnings of producing mines; contains an 8-year table of quotations of mining stocks listed on Canadian stock exchanges; lists the names and addresses of officials of various government mining departments, Securities Commissions, Stock Exchanges and trade and industry organizations. [428 pages; $12.00 per paper copy; order from the Northern Miner Press Ltd. or through ASBESTOS Magazine]

*MINERAL EXPLORATION, MINING & PROCESSING PATENTS 1975*—12th annual edition by O. S. North; covers substantially all of the significant United States, Canadian and British patents issued in 1975 on exploration for and mining of metallic and nonmetallic minerals (excluding solid fuels and petroleum), beneficiation and concentration of minerals, extraction of metals from ores and refining of extracted metals; contains over 4,400 entries including 675 abstracts with supplemental data in the form of flow sheets, flow diagrams, apparatus drawings and other illustrations; has five indices according to subject, reagent, assignee, inventor and patent number. [295 pages; $30.00, plus $5.00 if sent air mail; order direct from the author or through ASBESTOS Magazine]

*OFFICIAL U.S. & INTERNATIONAL FINANCING INSTITUTIONS: A GUIDE FOR EXPORTERS AND INVESTORS*—Provides information on sources of financing, insurance and procurement for U.S. exports and investments; contains data on program purpose and eligibility, supported export and investment values, interest rates and charges, procedures and contact points. [Free from the U.S. Department of Com-



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merce, International Finance Division, Room 4424, Washington, D. C. 20030]

*ECOTECHNICS*—Technological Yearbook for environmental protection written in English, French, German and Japanese; lists the names, addresses and telephone or telex numbers of 5,000 consulting engineering specialists plus 15,000 European sources for environmental materials and processes; carries 820 product classifications in such key environmental areas as water, air, solid wastes and noise. [320 pages; $50.00; available from Fairchild Books or through ASBESTOS Magazine]

*CHRYSOTILE ASBESTOS TEST MANUAL, 3RD EDITION*—Prepared jointly by the Asbestos Textile Institute, Inc., and the Quebec Asbestos Mining Association; provides 34 standard methods for testing the physical and chemical properties of Chrysotile asbestos fiber. [$18.95 to the U.S., Canada and Mexico; $21.95 to all other countries; place orders with ASBESTOS Magazine]

*THE ASBESTOS FACTBOOK, 3RD EDITION*—Compiled by the staff of ASBESTOS Magazine; written in layman's terms; offers useful information on the origin, locations and uses of asbestos; gives the chemical compositions of the various types of the mineral; contains data concerning testing methods and grades. [28 pages; $1.00 per paper-bound copy; order from ASBESTOS Magazine]

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# NEW ASBESTOS PATENTS

U.S. patents may be purchased from The Commissioner of Patents, Washington, D. C. 20231, for 50c each. Photoprints of non-U.S. patents may be purchased from the same source at a cost of 30c per page. Remittances should be in coin, currency or check and the number of the patent, name of the inventor and date of issue should be given.

*British 1,439,036*—A lightweight, water-resistant, high-strength solid silicate foam for use in cements, coatings, insulations, etc., is formed from a mixture of sodium silicate or potassium silicate, sodium silicofluoride, tall oil or oleic acid, asbestos fiber or glass fiber and optionally a low-cost inorganic filler; W. P. Banks, D. D. Sparlin & J. R. Carlson; assigned to Continental Oil Company, June 9, 1976; 17 pages.

*Canadian 987,423*—Automotive brake linings of extremely long service life and excellent brake action are formed from a mixture of a phenol-formaldehyde resin binder, barium sulfate, a major proportion of asbestos and 0.2-15% by weight of glass microspheres; W. J. D'Alessandro; assigned to Union Carbide Corporation, April 13, 1976; 16 pages.

*Canadian 990,455*—An improved filler for replacing carbon black in natural rubber compositions is made by reacting asbestos fibers with methylvinyl-dichlorosilane in the presence of a mineral acid and a saturated alcohol; the resulting "silanated" fibers improve rebound elasticity and torsion modulus in the product; C. Bleiman, J. Mercier & M. Van Russelt; assigned to Gerdec, June 8, 1976; 25 pages.

*Canadian 991,805*—A brake pad for use in heavy railway equipment is fabricated from a mixture of about 35% by weight of asbestos, 17% of phenol-formaldehyde resin, 28% of inorganic fillers, 10% of ground rubber particles and 5% each of cashew particles and a ground hard carbon filler; J. C. Adelmann; assigned to Johns-Manville Corporation, June 29, 1976; 7 pages.

*Canadian 991,930*—A board or paper for fabrication into friction articles is formed from a mixture of Amosite asbestos, Chrysotile asbestos, cellulose bisulfite, mica and/or other fillers, and phenol-formaldehyde resin; the Amosite asbestos improves speed of filtration during forming and increases product permeability; M. R. Guittard; assigned to S.A. Francaise du Ferodo, June 29, 1976; 8 pages.

*Canadian 992,054*—Synthetic asbestos for use in hydrocarbon conversion reactions is produced by reacting at elevated temperature and pressure a mixture of silica and a suitable metal cation, in the presence of oxygen and hydroxyl ions; a layered complex metal silicate of high purity and uniformity is produced; W. H. Sawyer, H. E. Robson & P. E. Eberly, Jr.; assigned to Exxon Research & Engineering Company, June 29, 1976; 72 pages.



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# CALENDAR OF EVENTS

*NBS-SPONSORED CONFERENCES*—To be held at the National Bureau of Standards, Gaithersburg, Maryland: Methods and Standards for Environmental Measurement, *September 20-24;* Air Monitoring Reference Methods and Traceability of Calibration Standards *September 30-October 1;* National Conference of Standards Laboratories, *October 6-8;* and Symposium on Procurement Practices, *October 13-14.*

*ASTM COMMITTEE MEETINGS*—C-16 on Thermal and Cryogenic Insulating Materials, Stan Musial and Biggies Hilton Inn, St. Louis, Missouri, *October 10-13;* E-40 on Technical Aspects of Products Liability Litigation, Sheraton Biltmore, Atlanta, Georgia, *October 13;* D-13 on Textiles, Belmont Hotel, New York City, *October 18-21;* F-3 on Gaskets, Sheraton Commander Hotel, Cambridge, Massachusetts, *October 20-22;* and D-14 on Adhesives, ASTM Headquarters, *October 27-29.*

*WATER POLLUTION CONTROL FEDERATION*—49th Annual Conference: Convention Center, Minneapolis, Minnesota, *October 3-8.*

*FIRST CONGRESS OF INTERNATIONAL TECHNOLOGY*—Organized by the International Technology Institute; The Pittsburgh Hilton, Pittsburgh, Pennsylvania, *October 3-8.*

*APPLICATION OF COMPUTER METHODS IN THE MINERAL INDUSTRIES*—14th International Symposium; The Pennsylvania State University, University Park, Pennsylvania, *October 4-8.*

*REMOTE SENSING OF THE ENVIRONMENT*—10th International Symposium; University of Michigan, Ann Arbor, Michigan, *October 6-10.*

*GROUNDWATER HYDROLOGY AND MINING*—A Course of the Mining Engineering Department of Mackay School of Mines; University of Nevada, Reno, Nevada, *October 11-16.*

*CANADIAN CHEMICAL & PROCESS EQUIPMENT EXHIBITION*—Automotive Building, Exhibition Place, Toronto, Ontario, *October 13-15.*

*LIFE SAFETY CODE SEMINARS*—Given by the National Fire Protection Association: *October 14-15* at the Ambassador Resort Motor Hotel, Minneapolis, Minnesota; *October 28-29* at the Hilton Inn, Oklahoma City, Oklahoma; *November 8-9* at Seattle Hyatt House, Seattle, Washington; *November 19-20* at Ramada Inn-East Flash Airport, Phoenix, Arizona; and *December 9-10* at the Washington Hilton, Washington, D. C.

*NOISE CONTROL TECHNIQUES FOR INDUSTRIAL AND MANUFACTURING PLANTS*—8th Annual OSHA-Oriented Course; Bolt Beranek and Newman Inc., Cambridge, Massachusetts, *October 18-20.*

*NATIONAL SAFETY CONGRESS*—63rd Annual event of the National Safety Council; Pick-Congress, Conrad Hilton and Blackstone Hotels, Chicago, Illinois, *October 18-21.*



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*ENVIRONMENTAL LAW*—Practical Course presented by Government Institutes Inc.; *October 21-22* at the Rice Rittenhouse Hotel, Houston, Texas; *November 18-19* at the Hyatt Regency, Washington, D. C.

*BASICS OF INDUSTRIAL HYGIENE*—Course offered by the American Industrial Hygiene Association and the National Institute for Occupational Safety and Health; *October 25-29* in New York City; *November 8-11* in Dallas, Texas, and *December 6-10* in Long Beach, California.

*PLACER EXPLORATION AND MINING*—Short Course of the Mackay School of Mines; University of Nevada, Reno, Nevada, *October 25-29.*

*BICENTENNIAL QUALITY CONTROL CONFERENCE*—Presented by the Chicago Section of the American Society for Quality Control; Museum of Science and Industry, Chicago, Illinois, *October 25-29.*

*BRINTEX EVENTS*—Exhibitions and Congressses organized by the Brintex Group, to be held *November 15-20* at the National Exhibition Centre, Birmingham, England, include: Public Works Congress and Exhibition/Construction Equipment Municipal Services; Environmental Pollution Control Exhibition and Congress (ENPOCON); and Effluent and Water Treatment Exhibition and Convention (EWT).

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# REMEMBER WHEN?

## (August 1926 ASBESTOS)

New Advertiser: Mohawk Asbestos Slate Co., Inc., Utica, New York

This issue contained the first of six articles on the Theory and Function of the Automobile Brake, written by Edward J. Pope of Ferodo & Asbestos, Inc., New Brunswick, New Jersey.

The properties of the defunct Franklin Manufacturing Company, at Franklin and Stoneboro, Pennsylvania, were reported as having been sold to Chicago Pneumatic Tool Company.

Atlas Asbestos Company, of North Wales, Pennsylvania, was erecting a new building to accommodate its expanding brake lining manufacturing business.

Charterland & General Exploration & Finance Company Ltd. was enlarging the mill and power plant at its Shabanie Mine to meet increasing demand for its fiber. Sales of the company had doubled in the three years just completed.

A photograph of the new Finishing Mill of Cyprus Asbestos Company Ltd. appeared in this issue. Partially milled fiber from a number of primary mills was finish-milled, blended and bagged in the facility at a rate of 9,000 pounds per hour. The system was adopted to ensure improved uniformity of product.

## (September 1926 ASBESTOS)

New Advertiser: Chevers Ltd., Cape Town, South Africa

ASBESTOS reported the death of Colonel John Jenkin Penhale on August 28, 1926, at the age of 61. Colonel Penhale had been active in the asbestos mining industry since 1888, with an interruption for his notable military service during World War I, and was Assistant Manager for Asbestos Corporation Ltd. at the time of his death.

Increasing numbers of cities and states were staging brake testing campaigns in efforts to increase highway safety. Most were using the test established by the National Bureau of Standards which specified a distance of fifty feet for stopping from a speed of twenty miles per hour. Whereas in 1925 between 50% and 60% of the cars tested required immediate attention, in 1926 that figure had dropped to about 20%.

The death of Walter L. Leventritt, President of Asbestos and Mineral Corporation, New York City, occurred on September 10, 1926, and was reported in this issue. Mr. Leventritt's company was a worldwide distributor of asbestos crudes and fibers, particularly those from the Bell Asbestos Mines of Thetford Mines, Quebec.

This issue contained the first of a series of articles on Engine Packings for High Pressure Steam Duty, by B. F. Betts, Associate Editor of The American Architect.

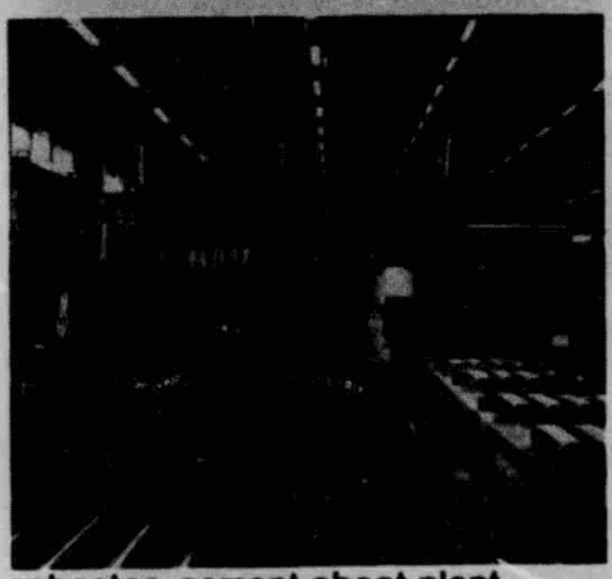


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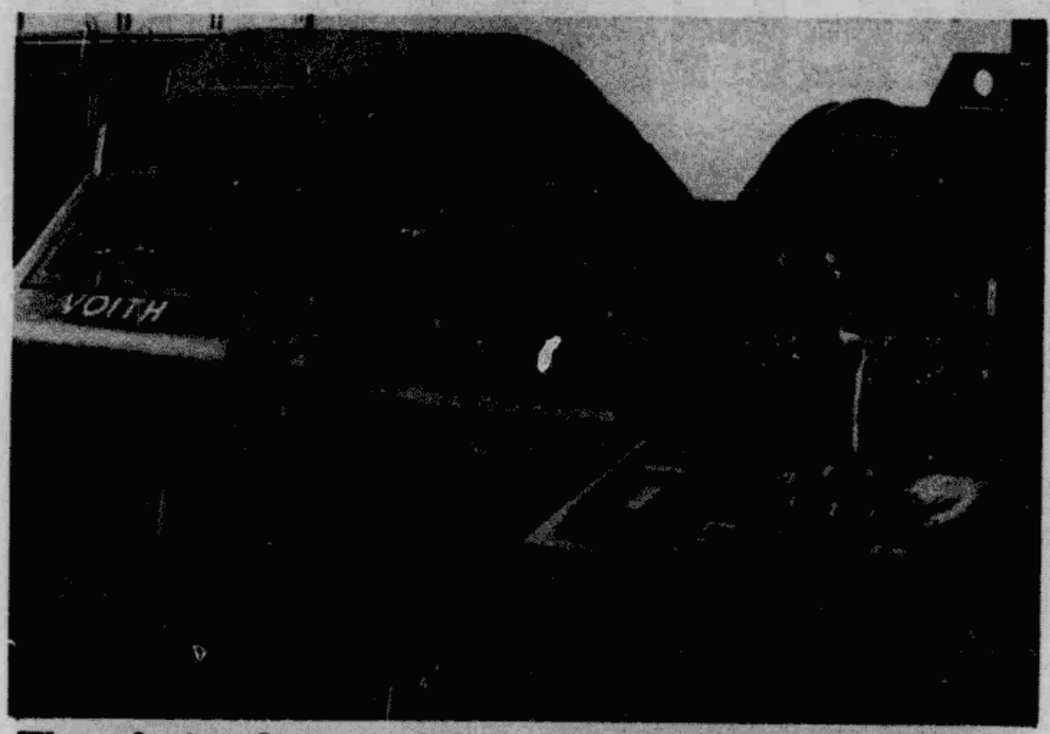
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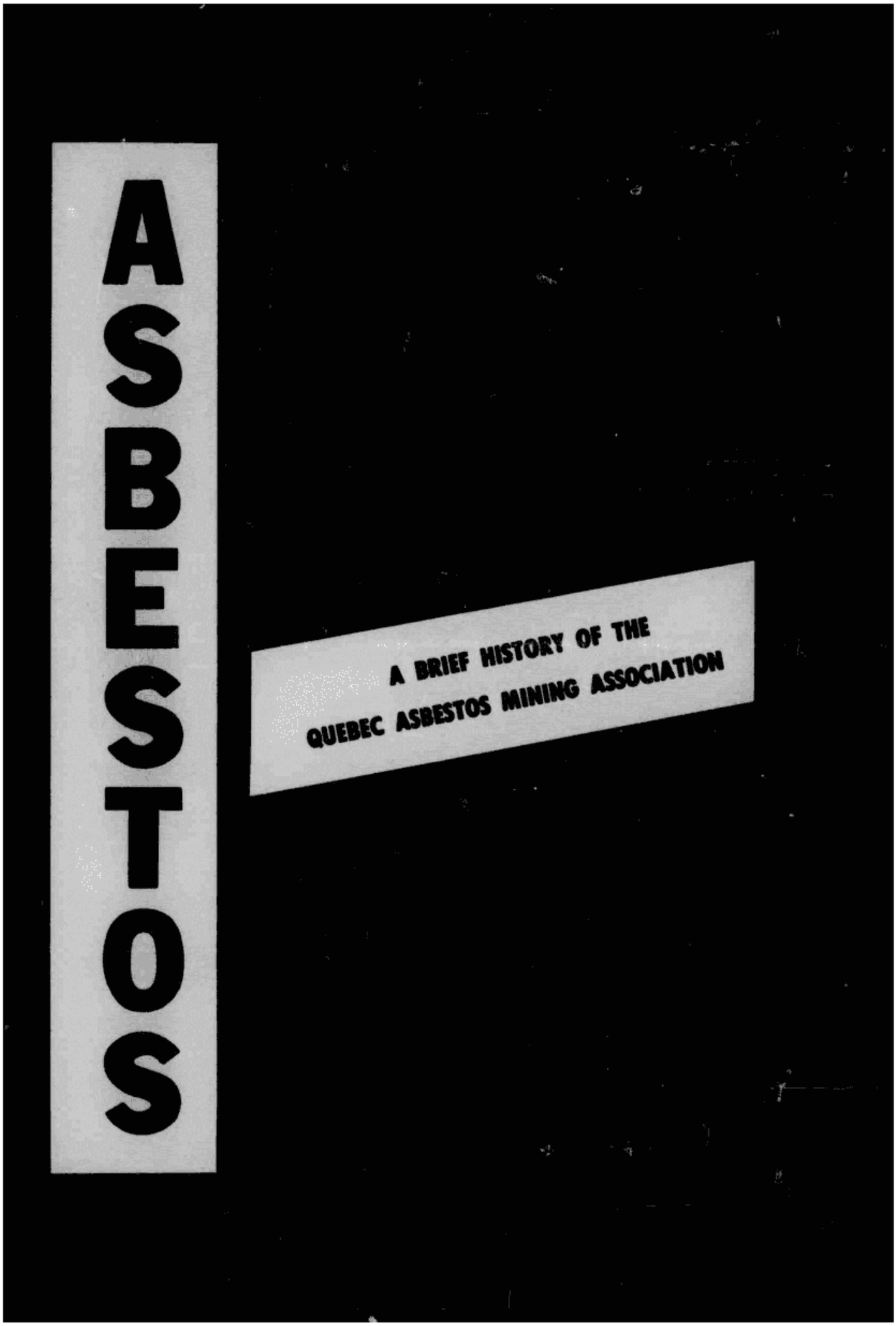
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