

REPORT ON VISIT

TO

EUROPE AND AMERICA.

BY

C.H. BROADHURST.

November, 1956.

PLAINTIFF'S
EXHIBIT

10645.0

CONCLUSIONS.

SELLING ARRANGEMENT.

A clear understanding now exists with our main competitors, viz. Cape Asbestos Company and Central Asbestos Company. A good deal of uncertainty has existed between the Companies mainly because none knew the others' intention regarding prices and sales policy. As a result of discussions both Cape and Central Companies have increased their prices to a figure which puts ours in better light. African grade "S", although accepted by customers to be about 7% - 10% inferior to our fibre, is used as a Yardstick for comparison and is our main competitor mainly because some users do not require a better fibre. Under the new prices, African Grade "S" fibre will be landed at European ports for about £81.10. 0 while our grade 3 will be landed at the same ports for approximately £86. 0. 0 assuming the proposed further increase in freights ex Australian ports has been adopted. This figure includes an increase in price to us of £2. 3. 0 for European Sales but users other than Eternit have been quoted an additional £16/- per ton and sales have been made at this higher figure. The current C.I.F. prices (prior to increase) (1956) to European ports are Cape Asbestos Company £76.10. 0, Central Asbestos Company £77.10. 0 and A.B.A. Limited £83. 5.

Sales will, of course, still be made in open competition but it has been agreed by all three companies that prices will not be lowered without advising the other two beforehand. This arrangement is important because Johns Manville's price to us is based on world prices and these have now been lifted to a more satisfactory figure and one which is obviously acceptable to Johns Manville.

MARKET POTENTIAL.

Careful appraisal of the market by Cape and Central people and my own findings all indicate that although production

is increasing fairly steeply there will still be a small shortage next year. There does not seem to be a Manufacturer of pressure pipes who is not planning some expansion and because of this consumption of blue fibre should continue to increase. Figures quoted by John Manville for market requirements ^{of} conduit are as much as six times their present ability to supply.

Hardies are aware of Humes proposal to make pipes in Australia and as Hardies pipes are not highly regarded compared to world standards, it would not be surprising if they considered using blue particularly as they cannot get enough Anosite.

FUTURE BUSINESS.

A new customer in Italia Cementifero has been secured and it is felt that this firm will be more satisfactory than Eternit as they are entirely dependent on the open market for supplies and have no affiliation with Eternit. They are reported to be a very sound Company financially and are expanding their business quite appreciably. It is believed that continuity of supplies would mean little to Eternit if slightly cheaper fibre became available from elsewhere at any time. Cementifero will, however, never displace Eternit entirely.

Humes Limited at Singapore offer an encouraging prospect and it is recommended that full consideration be given to joining with them either in an agency agreement or perhaps in a financial arrangement in connection with pipe making in Australia. The latter proposition has not been discussed with them.

I consider that the Japanese market should be supplied with at least some of its requirements. The grade supplied by Central Asbestos Ltd. is "SS" which is shorter than "S" but

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the "S" price is charged. Our fibre will compare more than favourably with the shorter "SS" grade and the higher price of £100 f.o.b. will be paid by the Japanese.

The Danish and Norwegian users are becoming interested in our fibre and they are considered likely users in the future. A sample shipment for test purposes is going forward.

COMPETITION.

It seems possible that Central Asbestos Company Limited may limit their production to about 20,000 tons p.a. because of anticipated transport difficulties and because of the necessity to increase all housing and other facilities necessary for additional tonnage. This figure should be reached in two or three years. Cape Asbestos Company will have little extra for the open market providing the Johns Manville program goes to schedule. Next year they will supply 15000 tons to Johns Manville and this is expected to increase to about 25,000 tons by 1962 if they can supply it. It is probable that Johns Manvilles' requirements will account for most of the increase in production by Cape Asbestos Company over the next few years at least.

Kuruman Asbestos have rapidly increased their output to a current figure of 11,000 tons p.a. According to Mr. Emsens about the same figure is expected next year. Eternit have a big holding in this Company and it is this factor which is affecting our market in that direction for next year. Their ultimate output, however, could be limited to a figure not much higher because they use the same transport facilities as Central Asbestos Company and they will meet the same problems

Russian fibre is being used somewhat more extensively in Europe and although unlikely to ever completely displace blue fibre for pipe making it is highly regarded and could cause the percentage of blue used to be reduced in some quarters

It is expected, however, that the increasing demand for pipes will more than offset any adverse effect which the Russian fibre may have on the market.

FIBRE QUALITY.

The only adverse comment concerning quality of our fibre was made by Dr. Mustacchi of Italian Eternit. He said that it was not as crude as it was. All other customers agreed that it was a very good fibre.

At Asbestos I met a wide cross-section of Johns Manville Staff including Mill Managers, Quality Officer and other Technicians and all commented favourably on our fibre.

At their Los Angeles Plant I told the Manager that we were sometimes a little worried about the amount of grit and fines in the fibre. His comment was that compared to Cape fibre we need have no worries in that direction as it was consistently much cleaner than Cape fibre and that it was a pleasure to open the bags and see some "real fibre." Array sheets were examined and some figures (average of several shipments) noted were:-

	<u>Rock.</u>	<u>- 100 Mesh.</u>
A.B.A. Fibre ^c	2.2%	22%
Cape "S" Grade	1.5%	31%
Norco NC300 (Mainly Transvaal)	1.4%	24%

Plus 14 Mesh figures were much better for our fibre than for Cape "S" grade.

It was explained to Mr. Harris the Manager, that it was difficult to remove grit if they needed the fibre in a crude condition. He agreed that they still had a lot to learn regarding treating of the fibre but at present they would prefer it crude rather than opened more.

VISITOR.

Mr. Hale a Technical Director of Cape Asbestos Company will visit Australia about March next. It is probable that he may ask if he can visit Wittenoom.

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SINGAPORE.

Hume Industries (Far East) Ltd. Singapore.

Mr. Swain, Managing Director, Mr. K. Potter, Factory Superintendent, and Mr. K. Cockcroft, Sales Manager were interviewed.

The market for asbestos cement pipe is buoyant at present and the factory is seven months behind in its deliveries. Current usage of blue fibre is approximately 1000 tons p.a. but next year it is expected that 1400 tons will be required. The pipe plant (2 machines) is worked 12 hours per day. Because of labour and supervision difficulties, Mr. Potter considers that the 12 hour day gives better overall performance than would result from endeavouring to work three shifts.

The blue fibre used is approximately half Cape "A" and half Transvaal and a total of 40% blue is used in the mix. Mr. Potter advised that Cape Asbestos cannot supply their full requirements for next year and the only offer of Transvaal blue received up to the time of my visit carried an increased price for next year.

Opening of the fibre is done by two passes through disintegrator

Mr. Swain advised that Humes Ltd. are now agents for the Italian pipe machine which is being universally adopted in the Far East and that during the next few years he expects that about 20 pipe machines will be installed in various Eastern countries. Negotiations are at present proceeding regarding machines in Ceylon, Indonesia, Bangkok, Rangoon and China. Manila and Formosa were mentioned as "probables" in the next two years, and Mr. Swain anticipates that within three years Humes will be producing asbestos cement pipes in Australia. Letters concerning some of these projects were sighted, and a party of technicians from Indonesia were visiting Humes plant while I was there. One of the Companies behind some of the above projects in the Bombay Burmah Trading Corporation which is a very strong financial concern.

As agents for the pipe machines Humes will automatically

be technical advisers to the various Companies for some years, particularly regarding fibre formulae. Because of this, Mr. Swain has requested that they act as our agents in the area under their influence. He considers that the new drive will not call for any blue fibre for about 18 months but in five years about 5000 tons p.a. will be required and this should increase to 10,000 tons p.a. within 7 - 10 years.

Such an arrangement as the above should be very satisfactory but it would to some extent cut across the agreement with Minerals Fibres Limited and some re-adjustment would be necessary. Mr. Swain would like to hear from us regarding this proposal.

Concerning their own fibre requirements, Humes would like a 25 ton trial shipment early next year and this has been promised. Mr. Swain was told that it was probable that we would be fairly fully committed for next year. However, as that area is our logical market and because of the possibility of direct shipments from Port Samson or Port Hedland we should do everything possible to build it up.

LONDON.

Cape Asbestos Company Limited.

Mr. Giles Newton Managing Director and Mr. Riley were interviewed. They are optimistic regarding the future for blue asbestos and consider that demand during the next two or three years at least should easily absorb all likely supplies. Estimated total production of this fibre from all sources next year (1957) is 80,000 tons.

John Manville had already been advised by Cape Asbestos that an increase in price would be effective next year but an actual figure had not been mentioned. Their first thoughts were in the order of £2 but were prepared to go higher if we raised our price a little. They were assured that our price for Europe would be increased at least £2. 3. 0 (to £A98) and possibly by a further £ 16/-. I intimated that we would also endeavour

to increase the price to John Manville by £A1 but that nothing firm would be undertaken in this regard.

Regarding price of Cape Blue to John Manville. Mr. Newton advised that at the end of last year John Manville "realised" that they were paying more than European buyers and insisted on a uniform price. Consequently the price for grade "S" was reduced from 203 dollars plus 9 dollars for sacks to £E68 plus £3 for sack (198.8 dollars). Mr. Newton reiterated that the higher price was arranged with John Manville in 1949 after the devaluation of sterling. He had informed me of this during my visit to London last year. Cape Asbestos Company invoices to John Manville were produced and were examined by me and the change in price occurred at the end of last December about the time I left London. This accounts for the letter from John Manville to us regarding prices of Cape Asbestos and for the fact that we could not reconcile the two prices quoted by Cape Asbestos and John Manville respectively. The sterling figure of £71 (68 + 3) is converted into dollars at the rate of exchange ruling on the date of the invoice.

Mr. Newton claimed that John Manville are continually pressing them to improve their grade to "something more in line with that provided by A.B.A. Limited." This approach, however, is constantly met with when discussing sales with the various buyers.

Freight rates paid on Cape Asbestos to America are 32 dollars per long ton to the West Coast and 22 dollars to the East Coast. Our rate to both coasts was about $29\frac{1}{2}$ dollars but has recently been increased by $12\frac{1}{2}\%$.

Both Cape and Central Asbestos people advise that production from the mine at Kuruman in which Messrs. Emsens and Schmidheiny and Turner and Newall are interested ~~are interested~~, is now 1000 tons per month. A large percentage of the fibre produced is a little shorter than grade "S" and it is believed that it is being sold at £E75 f.o.b. It is reported to be very clean but because of its shorter length can be no better than "S" grade

and is probably slightly inferior.

Including Transvaal Blue the current rate of production of blue fibre by Cape Asbestos Limited is about 30,000 tons and increasing. The cost of their new mill at Koegus is being written off over seven years with four years remaining.

Mr. Newton advised that he would be interested in making an offer if our mine was for sale.

New f.o.b. prices for 1957 are grade "S" £73 + £3 for sacks for Transvaal Blue and £71 + £3 for sacks. This is an increase of £5 per ton. Grade "A" is priced at £85 f.o.b. + £3 for sacks. Mr. Riley advised that little of this grade is used for Asbestos Cement but is mainly used in plastic mouldings. Its length is between $\frac{1}{2}$ " and $\frac{3}{4}$ ". Cape Asbestos have an agreement with John Beith Company whereby Cape buy the entire output at a price £4 below the lowest selling price of Cape Asbestos Company fibre. Last year they bought about 3600 tons and this year a similar amount is expected.

Central Asbestos Company Ltd.

Mr. R. Stewart was interviewed. He advised that they would be increasing production from 12,000 tons to about 15,500 tons next year but he felt sure that they would not be able to satisfy their customers requirements. They are keen to establish a working arrangement regarding prices and would be quite happy to increase their prices for next year.

Mr. Stewart considers that our fibre is appreciably superior to their grade "S" and almost in line with their grade "A" for which they now (1956) get £84 f.o.b. The fibre may be as good but their "A" grade is a very well graded fibre of about the same average length as ours. The technical officers at Kapelle Brussels have apparently told Mr. Stewart that 100 tons of his grade "S" fibre is equal to 75 tons of our fibre. This is an exaggeration of its value but there is obviously a margin in our favour.

Central Asbestos Limited place only about 2000 tons of

grade "S" on the open market. The rest of this grade is processed in their London Works for battery boxes and for which they get a "very substantial premium". Eternit bought 1500 tons of "A" grade last year from Central at £84 f.o.b and most of this went to Kapelle, Brussels, with a little to South America. A similar amount has been offered for 1957 at £85 f.o.b. which is equal to £91.12. 6 C.I.F.

For 1957 Central have raised their price of grade "S" to £76 f.o.b. They have none to offer Eternit.

Mr. Stewart claimed that the price of Russian Chrysotile in some European Countries was 40% below that of Canadian fibre of similar grade. In Germany we were told that prices were the same as Canadian.

Because of difficulties associated with the single rail track from Kuruman rail head to Port (800 miles) and because of other local factors, Mr. Stewart feels that a production of 20,000 tons per year may be their maximum target.

Turner & Newall.

Sir Walker Shepherd was in America whilst I was in England but I spoke to him briefly in New York. Apart from generalities the only point raised was the possibility of a visit by one or more of our technicians to his mill at Shabani next year should we decide to build a new mill at Wittenoom. He agreed to this in principle and had no objection to giving reasonable assistance. He was told that we would write him should such a move be decided on.

Atlas Stone Company.

Mr. Davis, Managing Director was interviewed. Although blue fibre is used in their sheets they are not prepared to pay the additional price for our fibre while African "S" grade is available. This firm apparently uses some G & G fibres and produces high quality products. Consumption of all fibre has increased over the past year from about 2,000 tons p.a. to nearly 4,000 tons.

LEEDS.

British Belting and Asbestos Co. Ltd.

A visit was made to this firm to determine if there was any possibility of grades 1 and 2 fibre being absorbed.

The Chairman, Mr. William Fenton, Dr. C.G. Allingly Chief Chemist, and Mr. H. Crowther Development Officer, were interviewed. They appear very open minded about blue fibre and appreciate its favourable features viz. availability, strength of fibre, acid resisting etc., but tests to date in laminated and moulded products have failed to produce the desired results. It is the Company's policy to explore every possibility and they are prepared to follow up some of the suggestions submitted by Mr. Franklin who has had some discussion with several potential users of suitable asbestos mats if such a product can be produced. It was agreed that we would make available free of charge two bags of grade 1 to cover experiments discussed.

To date, fibre glass has proved stronger than asbestos fibre in most experiments but in some cases the acid resisting fibre has advantages and this will be followed up.

Blue fibre has been used by British Belting in brake linings and tests have shown no benefit or disadvantage over white fibre. Chrysotile is necessary for most other products and the presence of blue fibre in the plant has in the past proved a nuisance and its use was discontinued mainly for this reason.

It is clear that the possibility of finding a use for any quantity of long blue fibre is rather remote but the few ideas which do exist should be tested while this firm is prepared to do so and it was agreed to make some fibre available while the opportunity exists..

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BRUSSELS.

Eternit.

A preliminary discussion was had with Mr. Emsens but he made it clear that he was not then in a position to make any decisions regarding fibre for 1957. He advised, however, that their factory in Switzerland would not require any because of overstocking and the same may apply to one or two other factories.

Mr. Emsens was told that there would be an increase in price but as expected he protested strongly against this. He said that Niederurnen factory had complained about grit in the fibre but that other factories had had no similar trouble. Mr. Emsens agreed that our fibre was better than African grade "S" but said that he would be interested in paying extra for a grade similar to African grade "A".

It was arranged that I meet Mr. Emsens in New York about 23rd October when the matter would be discussed further. At this meeting Mr. Emsens emphasised that it was against his principles to pay more for fibre if he could get it cheaper elsewhere. He said^c that the Italian people had to make up their own mind and he expected some decision from them late November or early December. Mr. Emsens or the Italian people would not know of the general price rise until early November so Mr. Emsens was told that we would reserve 2,000 tons for him but we would like a decision at the earliest.

During discussions he produced figures showing that he considered our fibre to be about 10% better in quality and with price and freights considered he agreed that it was 1% - 2% better than African grade "S". Under the new prices our fibre will be at least 3% better than grade "S" (at a price of £8. 8. 0.)

Mr. Emsens said that Eternit organisation would use about two hundred thousand tons of fibre next year and he considered that the use of blue fibre would increase because:-

(a) Increased pipe production.

(b) Greater percentage of blue fibre will be used provided, of course, that price is right.

He said that even if his plants, other than Italy, use no blue fibre from us next year they would in all probability require considerable quantities in 1958.

All Eternit factories use a corrugating machine which is their own patent and appear to be very satisfactory. When the flat sheet is formed it is picked up by suction in the usual way except that the suction is applied through slots (one slot for each corrugation) running the full length of the sheet. Before depositing onto the corrugated forms the width of the sheet is reduced by mechanically contracting the suction points towards the centre thus forming the sheet into its corrugated shape. It is then lowered onto the forms and stacked in the usual way.

I asked Mr. Emsens if he would agree to Asbestos Products Limited, using the machine should they wish to. He said that he was offering it to Hardies because of their long and friendly association but if Hardies refused then it would be open to us.

Mr. Emsens repeated his offer to buy an interest in our mine if such an opportunity existed.

COPENHAGEN.

F.L. Smidth, Dansk Eternit Fabrik A/S, and Tunnel Cement Ltd. Mr. Diemer, Mr. Morsing Larsen and Mr. Slayter representing the above firms respectively were interviewed in Copenhagen. All three appear to have changed their opinions since last year regarding our fibre and they are now keen to try it. They claim that the price is too high compared to that for African "S" grade but it was impressed on them that our fibre would give a higher yield. Mr. Morsing Larsen has asked for a three ton trial shipment.

Dansk Eternit at present use 11000 - 12000 tons of fibre

per annum. The pressure pipe business is temporarily slack because of reduced government spending. They have very little export business.

In opening fibres of all grades no disintegrators are used. The fibre is treated in edge runner or collar-gang type of mill in a wet state. Water content while milling is approximately 20%. Mr. Larsen claimed between 10% and 20% improvement depending on type of fibre by this method of treatment. The main benefit was apparently in the ultimate yield of fibre. This system of opening fibre is being adopted by all companies associated with F.L. Smidth.

Siam Cement Company works very closely with F.L. Smidth and Dansk Eternit, and the latter Company carried out all the laboratory work in connection with the tests recently made on our blue fibre supplied to Siam Cement Company some months ago. The tests apparently gave satisfactory results.

BERLIN.

Eternit A/G.

In Dr. Buchman's absence Mr. Blank and Mr. Wilke were interviewed. This Company controls five factories, two of which make pipes. The Berlin factory has three sheet machines and one Calzoni Pipe machine installed in 1954. Further extensions are planned and preliminary work is now in progress. The plant, particularly the pipe section appears very efficient and machining and other associated equipment is the latest and most efficient pattern. Monthly usage of fibre is 1200 tons. Our fibre supplied the Heidelberg plant which was scheduled to start up in February last but did not commence operations until last month. Because of this none of our fibre will be required next year but they should be in the market again in 1958. Mr. Blank said that all tests made on our fibre were favourable.

Russian fibre is obviously affecting the use of blue fibre to some extent. Mr. Blank claims it to be a good dry fibre but

grade 4 appeared to be the best available. The only complaint related to the amount of iron, wood and other foreign matter in the fibre. Prices are apparently in line with Canadian Chrysotile at least for the German factories.

The Company has recently doubled its capital and John Manville now have a shareholding.

CASALE MONFERRATO - ITALY.

Societa Cementifero Italiana.

Mr. Cavagnola, Mr. Massolo and Mr. Rege (interpreter) were interviewed. A request for 600 tons was made but we agreed to 300 tons at £80 per short ton. Later, in view of Eternit's objection to the increase in price and the fact that two of their factories would not require any fibre from us next year anyhow, the amount to Cementifero was increased to 600 tons with the price reduced to £79. 4. 0 (£A99) after the first 50 tons. The first shipment is in the form of a trial shipment and if it is found satisfactory the remainder will be accepted without General Superintendence Certificate. They are anxious to have early shipment (December) of the first 50 tons and if available would like increased tonnages as from April when a new machine is expected to come into operation. It is possible that 1000/1200 tons p.a. will be required.

This firm is independent of Eternit and seem satisfactory people with whom to do business. They have no connection with any blue asbestos mine and are entirely dependent on the open market for supplies. Bank and other reports are all favourable.

After the conversation with Mr. Emsens in New York when I reduced their option quantity to 2000 tons it was agreed to let Cementifero have the full 1100 tons which they requested.

Italian Eternit.

Dr. Mustacchi was interviewed in Genoa. He is an arrogant type of person and claims profound knowledge concerning the use

of blue fibre and sole responsibility for the introduction of blue fibre into the pipe making business.

The faults he finds with us and our fibre are as follows:-

1. The fibre is over fibreised as compared to earlier shipments - He would like it more crude.
2. He claims that we could have treated him better concerning extra freight rates incurred by him because of poor shipping from Fremantle to Naples. He claims that extra charges amounting to £2500 were incurred this year.
3. Wire in fibre - This dates back about a year and he would not admit recent trouble.

Dr. Mustacchi was advised that there would be an increase in price to £79. 4. 0 f.o.b. As I was not sure at that stage just how much Cape and Central were increasing their price and because of Mr. Brown's feelings regarding the price to be charged for shipments to John Manville, I reduced the price to Eternit to £78. 8. 0 f.o.b. Dr. Mustacchi, however, said that he was still not interested and he was told that under no circumstances would we sell at a lower figure and that it would be left with him for awhile.

During discussion, Dr. Mustacchi produced his laboratory test sheet which showed the relative values of fibres. African "S" grade was rated at 70, our fibre at 75 and Rhodesian C & G. 3 at 100. It was pointed out to Dr. Mustacchi that on that basis he valued our fibre at more than £110 f.o.b. as C & G 3 fibre is in excess of £130 C.I.F.

After discussions with Mr. Emsens in New York it was agreed to give Italian Eternit an option on 2,000 tons with a decision to be made before the end of November.

URALITA. - SPAIN.

This firm asked for 850 tons at the price quoted

viz. £E79. 4. 0 f.o.b. and pressed for an early decision. It was finally agreed to let them have 500 tons as they had advised that they were prepared to establish a letter of credit covering this amount if it would mean direct shipment to Barcelona. They were told that a decision would be made regarding the other 350 tons towards the end of November.

UNITED STATES.

Johns Manville.

Messrs. Fisher, Colton, Reynolds and Miller were interviewed. The supply position was discussed at some length and Mr. Colton's views regarding world supply and consumption following on his recent trip through Europe, coincided with my own findings. They were advised that we would make 8,000 tons available during 1957 at the same price as 1956 although we believed the price should be higher. My impressions were that Mr. Fisher expected an increase and suggested that we were wise to establish our market before increasing the price.

I pointed out that we needed some form of agreement regarding further supplies to justify further expenditure at the mine and to use as a lever in discussions with the Australian Government. Mr. Fisher was prepared to give me such an agreement immediately but said that he could quote more accurate figures if left until mid November after he had completed discussions with Mr. Newton of Cape Asbestos. I agreed that it would be better left until then if it would be more accurate and more definite. The letter can be expected late November or early December at latest. Mr. Fisher stressed, however, that we can take as definite his requirements as being:-

1957	8,000 tons
1958	10,000 - 12,000 tons.
1959	12,000 - 15,000 tons.

The visit of Messrs. Kelly & Telfer, Minister for Mines & Undersecretary for Mines in W.A. respectively, was apparently well received by Mr. Fisher and they went to some pains to stress the importance of reduced costs in connection with transport of our fibre. A good deal of time was spent by Johns Manvilles' Staff showing Messrs. Kelly and Telfer several mining properties.

Arrangements have been made for Johns Manville to let us have their quarterly requirements at least one quarter in advance so that we can take full advantage of available shipping and they were also asked to order 3500 tons during the first 6 months and 4500 during the second half year.

On 25th October I made a visit to the Johns Manville plant and mine at Asbestos. There was a Johns Manville Sales Conference being held at the time and Senior Officers from all plants and New York office were present. A number of Technical, Quality and Sales Officers were interviewed and without exception all spoke highly of our fibre. No complaint of any kind was made by anyone.

An inspection was made of the new mill and although it is probably about as efficient as a mill can be only a few features are applicable to our case. It does, however, demonstrate that a perfectly dust free mill can be built and maintenance could be reduced to a reasonable figure even on our very abrasive rock. Features which would be applicable to a mill at Wittenrom are:-

1. Dust collection is by means of 17 banks of socks house in the top floor of the building. Each bank of socks has its own fan with 350 H.P. motor capable of handling 125000 cu.ft. of air. The fans are situated down the middle of the floor with the bank of socks each side. Consequently, the whole floor is under partial vacuum. The clean air being drawn through the socks is blown back into the building during the

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winter to utilise the heat, and in summer it is blown to waste. A central duct extends through the centre height of the building and branches are taken to cyclone and dust points as required. A suction of about 10" water-gauge is maintained by the fans. Each bank of socks is situated above a bin which has a screw in the bottom for removing the dust and fibre and which is drawn off and treated over screens as required. The socks are automatically shaken about every 15 minutes. An approximate cost of dust installations of reasonable size is 1 dollar per cu.ft. of air capacity. The Johns Manville Dust installation cost about 2,000,000 dollars.

2. Screens.

The Johns Manville type of screen should be suitable for our purpose and we have a full set of working drawings.

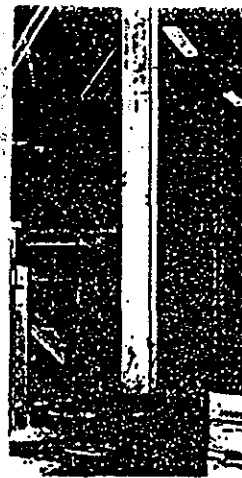
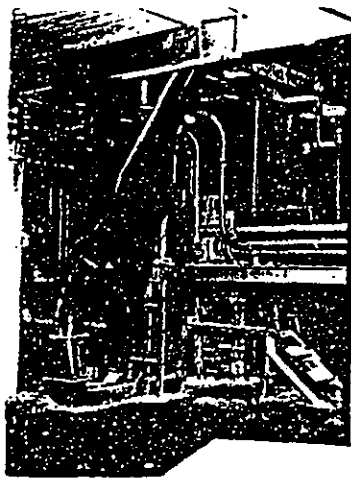
3. Feeders and Air Locks.

These are fitted to all cyclones and should be more suitable than the discharge sock currently in use at Wittenoom. The main advantage is that a more regular discharge would be obtained thus providing more even load on screens and in trommels. Plans have been secured.

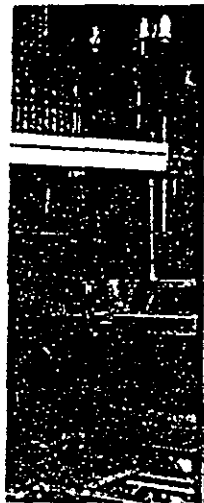
4. Bauer Grit Separator.

4. This device is used extensively in the Johns Manville plant and appears to assist quite appreciably in cleaning the fibre. It is generally agreed, however, that because of the crudeness of our fibre it would be less effective and the discharge would certainly have to be led back in the circuit as it would contain quite a lot of crude lumps of fibre.

The dust collection principle, cyclone discharge feeders



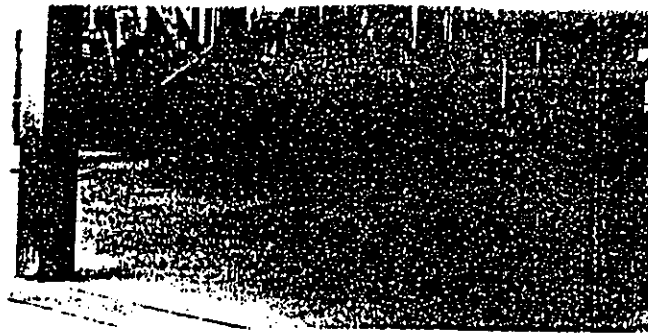
Ram pushing
compressed
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bags.



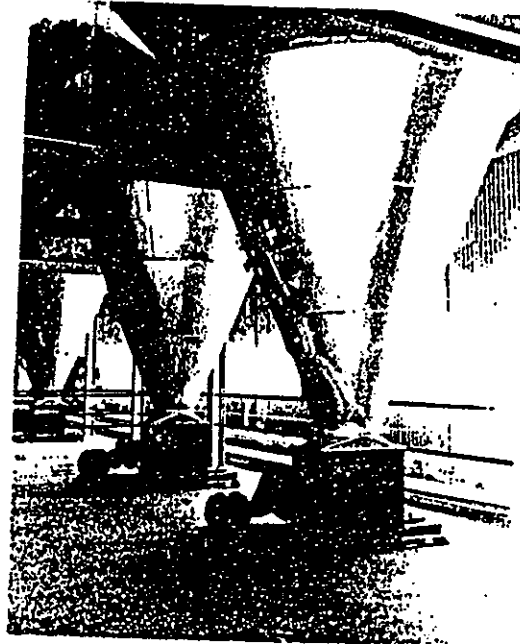
Discharge
Side of
Baggers



Side View
of
Screens



Bauer
Separat



Air Loc
on
Cyclone:



Bauer
Separat

and screws are similar in both the Johns Manville Plant in Canada and the Shabani Plant in Africa.

Because it is more or less on one floor and much smaller it is considered that the Shahani Plant would provide more practical information for us than the Johns Manville Plant.

The mine at Asbestos was inspected and although an excellent system of mining for that type of ore body it has, of course, no application at Wittenoom. Each block contains approximately one million tons of ore and the extensive development necessary below each block costs about 2/3 per ton. The ~~running~~^{mining} costs, other than development, would be a similar figure. Ore output now is about 12,000 - 14,000 tons per day and fibre output is about 2,000 tons per day.

The plant at Los Angeles was inspected. Pipes and insulating materials are the main products. There are four pipe machines. One machine is full time on conduit which uses little blue fibre and one other machine is part time on this product. In all, about 20,000 tons of fibre is used p.a. and increasing.

The pipes are subject to much more severe tests that applies to most other parts of the world. They undergo a severe bending stress test and are water tested to 520 lb. per sq. inch compared to 350 lbs in Germany and 250 in Japan.

All fibre is treated the same way viz. one pass through a Torrey Cyclone type of mill. I feel that this could be improved on by using an edge runner type of mill. The plant Manager certainly seemed somewhat hazy on what may be the best method and the only other method tried, to the best of his knowledge, was two passes through the mill but this proved detrimental. He was quite happy with our product as compared with other fibres

KEASBY MATTISON.

In the absence of the President Mr. Leshar the Director

of Purchases was contacted. They have their supplies for next year but as they are expanding somewhat it is possible that they could be interested in supplies later. Mr. Leshar would like samples of our current production for further reference.

Keasby Mattison currently use blue fibre at the rate of about 3,000 tons p.a.

AGENTS.

Minerals Fibres Ltd.

Mr. Franklin continues to be active and conscientious and little fault can be found with him as an agent. He has requested that some amendments be made to his agreement and he was told to put his suggestions in writing and these would be considered.

Carters (Merchants) Ltd.

Mr. Bradley is the only one in the business who is conversant with the asbestos business but he was away in Africa. He returned a day before I left London and a few matters were covered by telephone. Their efforts during the year are disappointing and it is strongly recommended that they be given no more territory, at least at present.

It seems probable that a sale will be made in their territory in Germany but trials are still being made.