

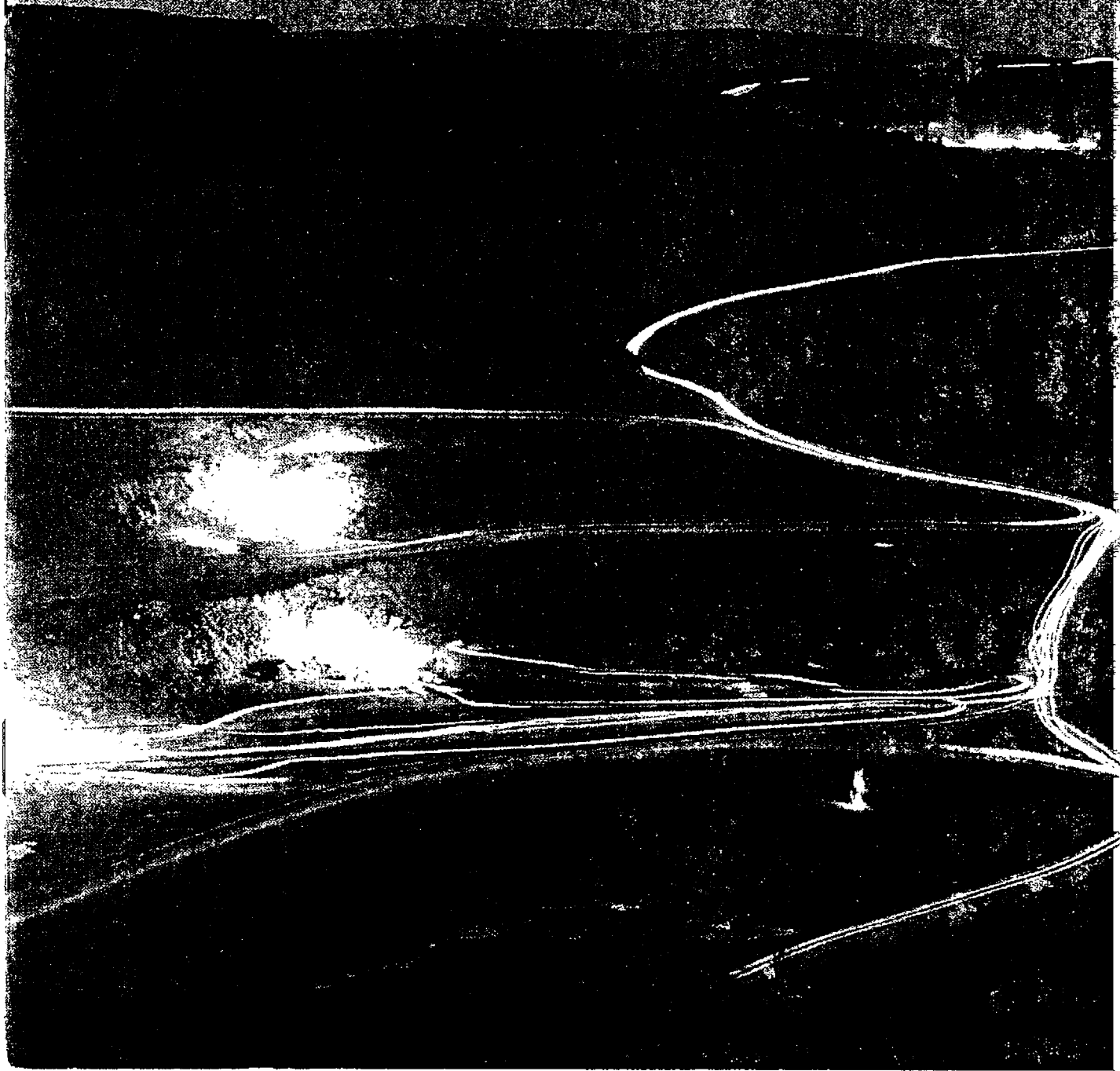
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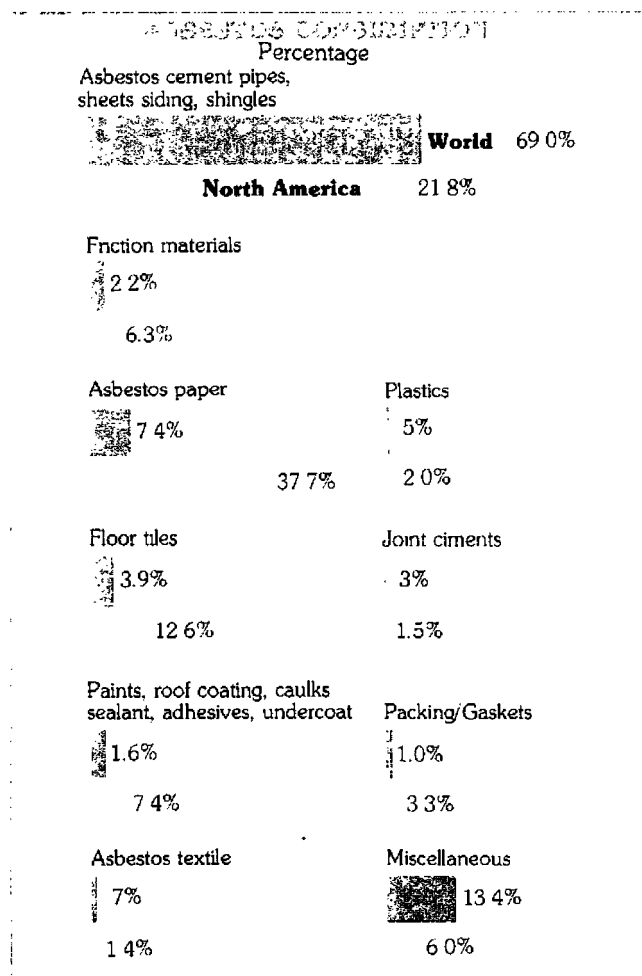


It's an Asbestos's World

More than 80 countries the world over buy Quebec's chrysotile asbestos.

They use these fibres to manufacture a range of some 3,000 products. These include: — asbestos-cement construction materials such as sheets and shingles, water and sewage piping; conduits, floor tiling, automotive brake linings and other friction materials; asbestos papers used in electrical insulation and roofing materials; fireproof textiles, paints, reinforced plastic products, asphalt overlays for highways, thermal and acoustical insulation materials and a range of gasketing, putties, caulks, sealants and surface coatings.

You'll find Quebec's asbestos in Scandinavian homes, New Zealand high schools, Israeli irrigation projects; in the disc-brakes and clutch-linings of British racing cars, in a German welder's protective clothing, in the insulation of a Japanese turbo-generator, in a Canadian paper machine... It's in Brazilian housing projects, U.S. jumbo jets and gas stations, Indian pipelines and Central African locomotives...



its properties

The worldwide acceptance of Quebec's chrysotile asbestos and its immense range of applications stem from five inherent characteristics of the mineral: —

- It is non-combustible, inert and resistant to heat generated by friction.
- It insulates against heat, cold and noise.
- Being a fibre that possesses greater tensile strength than steel, it acts as a reinforcement for many materials, especially cement and plastics.
- It resists corrosion and attack by alkalis and most acids.
- It has good dielectric properties.

What's more, chrysotile asbestos provides these characteristics at remarkably low cost.

Because of this unique combination of properties — not to be found in any other natural or man-made substance — chrysotile asbestos finds its way into hundreds of applications in which human safety is at stake.

It is indispensable in brake linings because it withstands the high temperatures attained in braking. Consequently road, rail and, to some extent, aircraft safety depend on it.

It's the only mineral that can be spun and woven into cloth for such uses as firefighters' clothing and fireproof theatre curtains.

Used as a thermal insulation material on the structural steelwork of large buildings, chrysotile asbestos helps prevent them from collapsing in the event of major fire.

And it's also the basis of fire-resistant partitions in ships, offices, schools, hospitals, stores and other locations where large numbers of people congregate.

In these and many other essential, life-saving uses, there is simply no known substitute for asbestos.

Yet, for all its varied uses, Quebec's chrysotile asbestos is usually invisible in virtually all its applications. Like the yeast in bread, asbestos is just a small part of most finished products, yet it's indispensable.

The Mineral

Like iron, copper, nickel or zinc, asbestos is a mineral.

The chemical formula for chrysotile asbestos is $3\text{MgO} \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$. It is a hydrous magnesium silicate, closely allied to soapstone, the rock Eskimos use for their carvings.

But unlike gold, copper, lead or zinc, asbestos is not an element and it occurs in several different varieties. In addition to chrysotile, there are types called amosite, anthophyllite and crocidolite. As well as being mined in Canada, the mineral is also produced in the USSR, southern Africa, Cyprus, Italy, the U.S.A., Australia, China, Japan and several other countries.

Commercially, chrysotile is the most useful — and valuable — form of the mineral. In Canada, it comes from Quebec, British Columbia, Yukon Territory, Newfoundland and Ontario. It is the only variety to be mined in Canada.

Over 80 percent of Canadian chrysotile production — or approximately 30 percent of the world's supply of all forms of asbestos — comes from a 60-mile strip of Quebec's Eastern Townships between the St. Francis and Chaudière Rivers.



Its Production

The rolling hills of Quebec's Eastern Townships have yielded chrysotile asbestos since 1876.

In the towns of Asbestos, Black Lake, East Broughton and Thetford Mines, five mining companies, created by Canadian, U.S. and British interests, produce more than 1,500,000 tons of chrysotile fibre a year.

By doing so, they inject each year more than \$250,000,000 into the Quebec and Canadian economies.

Mined in much the same way as other minerals, asbestos ore goes into a mill, not a smelter. There it is crushed and screened; the fibre is then separated, cleaned, graded and bagged ready for shipment to fabricating plants around the world.

Air is the muscle-power of this milling process. To separate a ton of fibre from the 20 tons of crushed mother-rock in which it is embedded requires roughly 10 tons of air in the form of suction. Vacuum is also the key to the complex and costly ventilating and dust control systems that protect the workers' health and the environment of the mining communities.

A basic fact of life for Quebec's chrysotile producers is that all chrysotile fibre is not the same. Some fibres are better suited than others for a specific manufacturing process.

Because of the immense range of products that contain asbestos, Quebec's asbestos mines produce up to 150 different grades of fibre. Since the 1930's grading procedures are uniform throughout the industry thanks to the Quebec Standard classification system for asbestos fibre. On the basis of fibre length, the Quebec Standard divides chrysotile asbestos into eight basic groups which are further sub-divided into grades and sub-grades, determined by color, absorbtivity, density, strength and other characteristics.

These eight basic groups, which, together with their grades and sub-grades, make up the Quebec Standard classification system, are recognized the world over as a stamp of mineral integrity.

C O R R E C T I O N S

Page 3: Production - 1,316,000 tons of fibre for a value of \$460,000,000 approximately in 1978.

Page 5: Prosperity - Annual salaries: \$130,000,000 in 1978.

Increase of Industry's output of 50% over the past 25 years.

Page 6: Asbestos Pay-Cheques: The total value of equipment, supplies, etc. purchased by the Québec Asbestos Mines is estimated to have increased to more than \$150,000,000 in 1978.

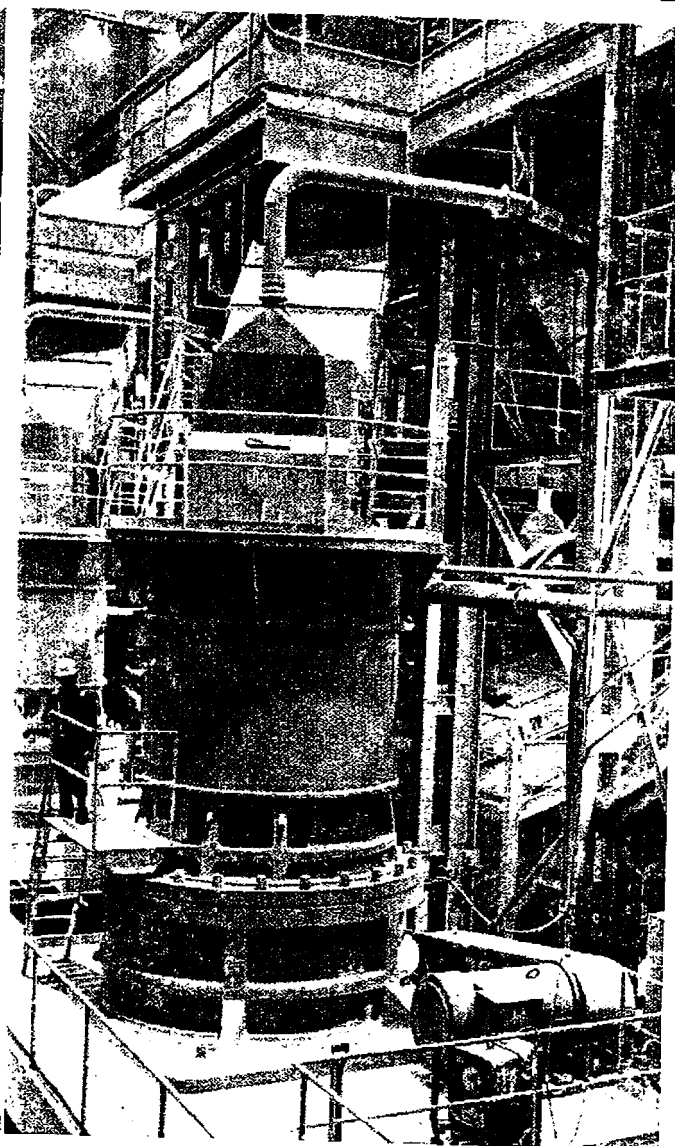
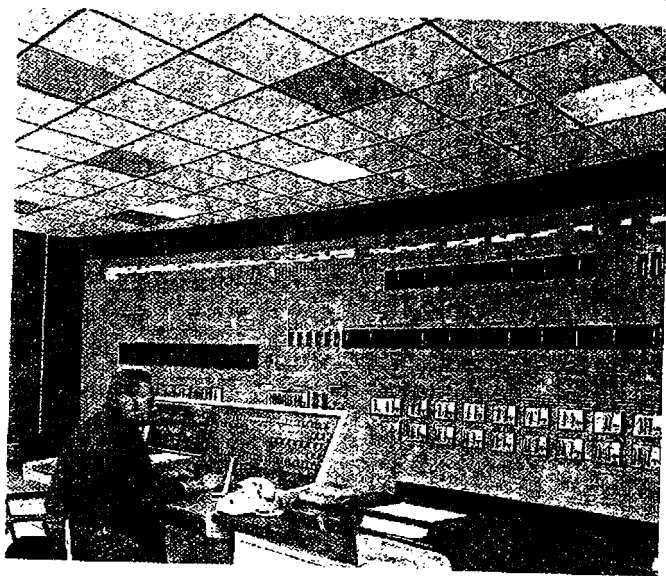
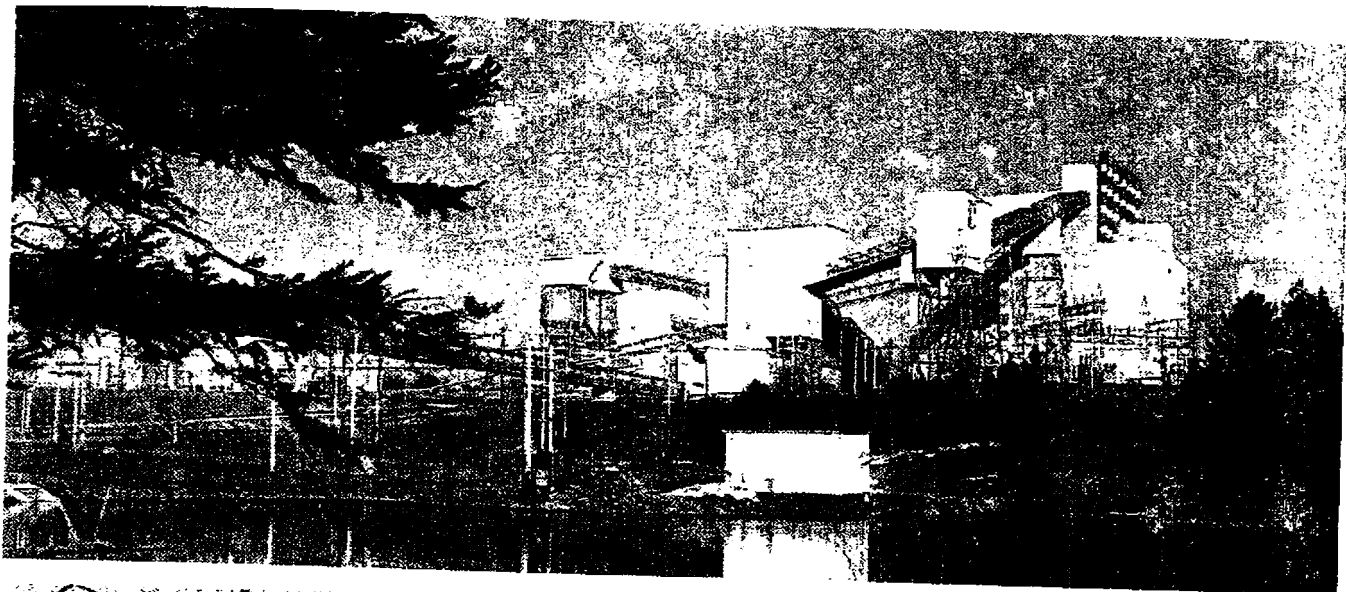
Page 7: Member companies of the Québec Asbestos Mining Association:

Carey-Canada Inc., East Broughton, Que.
Johns-Manville Canada Inc., Asbestos, Que.
Lac d'amiante du Québec Ltée, Thetford
Mines, Que.
Les Mines d'amiante Bell Ltée,
Thetford Mines, Que.

Address of Québec Office: unchanged

New address of Montreal Office:

Suite 410, 1130 Sherbrooke West,
Montréal, Que. H3A 2M8



Prosperity, Progress in Quebec

Each year, the Quebec asbestos mining industry pays its employees over \$100,000,000 in wages and salaries as well as approximately \$30 million in direct taxation to the Federal, Provincial and Municipal Governments.

Federal Government statistics reveal that the citizens of Asbestos and Thetford Mines are among the highest net income earners in the Province.

Their incomes, plus those of hundreds of employees in the array of locally-established secondary industries which supply much of the equipment, supplies and services needed to keep the mines in operation, are the economic mainstay of the communities, with a combined total population of approximately 55,000, in which they live.

Thanks to the overall prosperity which asbestos creates, the mining centres in the Eastern Townships of Quebec contain cultural, educational and recreational amenities, all of them citizen-run, which are second to none in Canada.

Asbestos: A Growing Industry

Approximately 6,500 men and women are employed in the mining and milling operations, maintenance shops and offices of Quebec's asbestos mines.

Over the past 15 years, the industry's output has risen by over 50 per cent. This has resulted in a gradual increase in employment despite the closure of four mines in that period.

The growing world demand for asbestos — rising by an average rate of four to five percent each year — has led to the constant introduction of new more efficient mining and processing equipment and control systems.

The result has been a shift in traditional employment patterns. Until some 15 years ago, well over half of a typical asbestos mine's work-force consisted of production workers — men engaged in the mining of ore and

the milling of asbestos fibre.

Today, that same proportion of workers is responsible for maintaining in peak condition the production equipment and process control installations that, ever-increasingly, are the muscle-power of the modern asbestos mine.

As well as providing steady employment for skilled production, maintenance and clerical workers, the specialized needs and goals of Quebec's asbestos industry offer careers for engineers, accountants, research and industrial hygiene technicians, marketing specialists, traffic experts, security personnel, skilled craftsmen of all types, ventilation technicians, computer programmers, electronic repairmen and a host of other vocations.

More than 95 percent of all asbestos industry employees were born, raised and educated in the mining communities themselves.

A measure of the stability of the employment offered by the industry is that, at one mining company at least, over 50 per cent of the employees have 25 years or more service.

1. The asbestos industry is a major contributor to the economy of Quebec.
2. The industry provides a wide range of employment opportunities for both men and women.
3. The industry is a major source of tax revenue for the Province of Quebec.
4. The industry is a major source of employment for the communities of the Eastern Townships.
5. The industry is a major source of employment for the Province of Quebec.
6. The industry is a major source of employment for the Province of Quebec.



Asbestos Pay-Cheques

Asbestos mining is a primary industry. As such, the mining companies must purchase from secondary manufacturers or suppliers the millions of dollars-worth of equipment, supplies and services needed to keep mines and mills in operation. There are consequently some 65,000 Canadians, the vast majority of them in Quebec, who benefit directly and indirectly from asbestos mining.

These are just some of the secondary industries whose employees are paid, at least in part, by "asbestos pay-cheques": — transportation companies, machinery and equipment manufacturers, structural steel fabricators, automotive companies and truck-builders, electrical power distributors, oil refineries, explosives makers, paper and plastic container manufacturers, rubber companies, construction firms, consulting engineers, diamond drilling contractors and lumbermen.

The store-rooms of a typical asbestos mining company stock over 14,000 separate items — from giant jaw-crusher components to carbon paper. Virtually all these items are manufactured in Canada. Whenever feasible, they are purchased from suppliers in the asbestos communities themselves.

Dozens of secondary industries in Quebec's asbestos towns depend on the mines for their business: — foundries, armature rewinders, bag suppliers, trucking companies, industrial caterers, tire repair firms, steel fabricators, hardware suppliers, building contractors...

The total value of the equipment, supplies and services purchased by Quebec's asbestos mines is estimated to have increased from \$3,000,000 in 1937 to over \$100,000,000 in 1976.

The World is our Market Place

Per-capita consumption of asbestos in Canada is roughly comparable to that in the U.S. As a result, this country supports a small but vigorous asbestos products manufacturing industry, based mainly in the densely populated cities.

And here there's a paradox. Even though asbestos fibre is ideally suited for the manufacture of construction materials — worldwide some 70 per cent of Canada's asbestos output is used for this purpose — there's only a limited Canadian market for these products.

In a highly developed country like ours, asbestos-based construction materials must compete with a wide assortment of non-asbestos building materials, including brick, wood, steel, cement, aluminum, plastics and even paper.

The competition is chiefly based on delivered price at the building site. Although asbestos-cement is a high-quality construction material, it contains comparatively little asbestos — average 15 percent. The rest consists of cement, a dense material which, in finished form, is uneconomical to transport over long distances. Moreover, the non-asbestos ingredients are available at low cost virtually anywhere on earth.

Because of high transportation costs, asbestos-cement construction materials can only be economically manufactured where the manufacturing plant is located close to the market it serves.

These economic considerations, then, compel foreign manufacturers to purchase their fibre requirements from Canadian asbestos mines, have them shipped to their plants and mixed there with locally obtained cement.

Export restrictions on milled fibre in an attempt to artificially promote Canadian shipments of manufactured products, would simply increase costs, especially for asbestos-cement materials and bring about a loss of market.

For the Canadian asbestos industry, now exporting 95 percent of its annual output, the consequences in terms of production, sales and employment would be disastrous.

Canadian asbestos manufacturers can operate profitably in the export market, such as the U.S., only by producing a limited range of items with a high asbestos fibre content. Current transportation economics and labour costs, and the composition of asbestos-cement materials make it impossible for the Canadian asbestos products industry to export finished asbestos-cement products or other materials with a relatively low asbestos content.

Asbestos and Health

In recent years there has been growing public concern about the risks to health associated with asbestos.

Quebec's asbestos industry has long shared this concern. It sponsored in the 1930's some of the first studies in North America of asbestos-related disease. In the intervening years, it has expended millions upon millions of dollars on sophisticated equipment, systems and techniques aimed at protecting the health of workers and of community residents by eliminating dust emissions both inside and from its mines and processing plants.

Through the Institute of Occupational and Environmental Health in Montreal, similar industrial health organizations and selected hospitals and universities around the world, the industry continues to support intensive epidemiological and other research projects. These are designed to identify and eliminate asbestos-based health risks not solely for Quebec's asbestos production workers, but also for the worldwide fabricators and users of finished products containing asbestos. The known medical facts, supported by studies of groups of exposed workers over 40 years, are that:

1. Asbestos-related health risks are basically confined to the work environment. The risks are well known and are controlled by Government regulations.
2. Asbestos-related diseases develop, generally, only after the inhalation of abnormal quantities of airborne asbestos dust.
3. Concentrations of this order have not been found in

the general urban atmosphere, and the general public are not at risk on this account.

4. At no time did the medical literature report that any member of the public has ever contracted an asbestos-related disease as a result of the normal use of asbestos-containing products, let alone of the occupation of buildings in which asbestos is incorporated.

In view of the dose-response relationship that, according to scientific evidence to date, exists with asbestos-related disease, it now seems reasonable to suppose that, by reducing the dose to which workers occupationally exposed to asbestos are subject, the current extension and improvement of dust control methods will lead to a reduction in the already low incidence of these diseases.

In short, all evidence indicates that the public is not in danger. The persons who may be exposed to risk — that is, the workers occupationally exposed to asbestos dust, now enjoy the protection of effectively controlled conditions, in the development of which the Canadian asbestos industry leads the world.

Note:

With the aim of informing the public about asbestos and the health risk, the Quebec Asbestos Mining Association has published a brochure entitled "Asbestos and Your Health". For a free copy, please write to the Quebec Asbestos Mining Association at the address shown.

Published by the Quebec Asbestos Mining Association on behalf of its member-companies: —

Asbestos Corporation Limited, Thetford Mines and Montreal, Que.

Bell Asbestos Mines Ltd., Thetford Mines, Que.

Canadian Johns-Manville Co. Limited,

Asbestos, Que.

Carey-Canadian Mines Ltd., East Broughton Station, Que.

Lake Asbestos of Quebec, Limited, Black Lake, Que.

Accurate and up-to-date information about Quebec's asbestos-mining industry is available from these companies or by contacting the office of the **Québec Asbestos Mining Association**

Room 320, 580 Grande Allée Est, Québec G1R 2K2

Telephone: (418) 529-8168 or

**P.O. Box 1643, Station "B"
Montréal, Qué. H3B 3L3**

1. The first photograph shows a person standing in a room, looking out a window. The person is wearing a dark jacket and light-colored pants. The room has a window with vertical blinds and a door to the left.

2. The second photograph shows a close-up of a person's face, wearing a plaid shirt. The person is looking down, and the image is somewhat blurry.

3. The third photograph shows a person standing in a room, looking out a window. The person is wearing a dark jacket and light-colored pants. The room has a window with vertical blinds and a door to the left.

4. The fourth photograph shows a close-up of a person's face, wearing a plaid shirt. The person is looking down, and the image is somewhat blurry.

5. The fifth photograph shows a person standing in a room, looking out a window. The person is wearing a dark jacket and light-colored pants. The room has a window with vertical blinds and a door to the left.

