E. MARTINEZ

Bulletin

PUBLISHED BY L'ASSOCIATION DES MINES D'AMIANTE DU QUÉBEC JULY/AUG. 1978 VOL. 2 NO.

The debate on manufacturing

A general approach is very difficult to use when discussing the prospect for asbestos fibre manufacturing, just as it is inappropriate to speak of an asbestos finished products industry per se.

There is no one specific industrial sector for asbestos finished products: there are industries related to pipe, construction materials, floor-coverings, textiles, friction materials and other products, each one governed by its own set of rules, and using asbestos fibre as raw material in varying degrees. However, asbestos-based products share a common trait in that the majority are mature products which are in decline, at least with respect to their traditional markets.

In fact, if the rise in demand shows a marked decrease in the traditional European and North-American markets, this is being compensated by a rapid increase in the developing countries, and more particularly, in the Near East and Africa, where the production capacity for pipe and asbestos-cement sheets is growing considerably.

Contradictory debate

In the present Québec context, one is faced with a contradictory debate on the future of asbestos fibre. Some state that there will soon be a world shortage of fibre, which consequently will increase the bargaining power of Québec producers. Others feel that the future of asbestos fibre is by and large uncertain.

These two viewpoints are more or less realistic insofar as, given the projected small increase in asbestos supply and demand, the real question to be asked is: will there be a surplus in production or in demand, and for what types of fibre? A surplus demand could justify mining new deposits, and be absorbed by price increases, while a surplus supply would result in a decreased rate of use of the fibre production capacity.

Supply and demand

In 1978, world production of asbestos fibre was about 5.8 million tons, of which 2.6 million tons came from eastern Europe and 1.3 from Québec. Hence Québec production represented 22% of the world total and 44% of western production. From 1978 to 1981, world demand should rise at an annual rate of between 1 and 2%, primarily because of the growth in developing countries. At the same time, the supply will likely stabilize in the West and increase in Eastern Europe.

It is thus possible to project a very slight deficit in world supply, while developing countries will have a slightly increased demand which could for the most part be filled by production in eastern countries. In fact, this deficit will be mostly felt with respect to short fibres of which there will be a surplus in Eastern Block markets.

Consumption

Even if Québec exports 96% of its asbestos abroad and could increase local manufacturing, it is interesting to note that its per capita production capacity is relatively high. Thus, Québec manufactures more than 15 lb of asbestos per capita, as compared to 6.2 in the United States, 6.6 in Europe and .7 in Japan. The means of increasing asbestos manufacturing in Québec can be carried out on three levels: the setting up of plants for products with favorable market potential, the relocation of plants, and research and development.

As regards the objectives related to job creation and maximum fibre manufacturing, we are faced with the following dilemna: products with high asbestos content, such as papers, are generally used in industries requiring a small labour force, while products likely to create more jobs, such as asbestos-cement and friction materials, have a much lower asbestos content.

A study on the development of asbestos research

CDT is actively pursuing its study

The Centre de développement technologique (CDT) of the Ecole polytechnique de Montréal is actively pursuing its study of the development of asbestos research in Québec which deals with medical, epidemiological, technological and theoretical research, as well as technological research related to the production of asbestos fibre and asbestos-based products.

Assessment and future prospects

In addition to this analysis of the asbestos research situation in Québec, the study will identify all the factors likely to limit or promote the development of research in Québec in every field related to asbestos utilization, and will also make an inventory of the staff and equipment found in the various research centres and university laboratories. Based on the study of these precise fields, the final report will consist, in addition to the introduction and conclusions, of four chapters entitled: Review of Research in Québec, Restrictions to Research in Québec, Human Resources for Research in Québec, and Research Program Methods, the latter chapter being divided into sections dealing with health, hygiene and safety, research programs in progress, fibre marketing and research of new products. The report will also contain a chapter concerning the structuring of the proposed research and its financing.

The team

The Centre de développement technologique has secured the services of several specialists with diverse fields of expertise for this study, which is being directed by Laurier Juteau, Eng. and Professor at the Ecole polytechnique. The chief participants are René Dufour, Professor of Mining Engineering, and Roland Doré, Professor of Mechanical Engineering. The other participants are Guy Perreault, Professor of Mining Engineering, Armand Patenaude, Associate Professor, Mechanical Engineering, and Guy Daoust, Data-processing specialist.

In addition, the research group includes Dr. Francine Aubry, Epidemiologist, McGill University, Dr. Graham Gibbs, who has conducted several research projects related to asbestos utilization at McGill University's laboratories, Dr. M. Jenicek, Epidemiologist, University of Montréal, Marc Trudeau, AMAQ technical advisor, and Jean Gauthier of Kilborn Engineering.

Twenty organizations

The Centre de développement technologique intends to include in the study all organizations that are interested in one way or the other in the asbestos industry and in those fields associated with fibre production and asbestos-based product manufacturing. In July, CDT representatives began to visit university, industrial and government laboratories, while nearly 20 research organizations were called upon to collaborate in the study. According to CDT officials, all the laboratories visited were very interested to participate in the development of any project aimed at ensuring the viability of the asbestos industry in Québec.

The CDT study will also take into account the work already carried out by the Sorès group for AMAQ and the research that has been done abroad.

Les Mines d'amiante Bell of Thetford Mines temporarily halted production in July to begin two weeks of significant work in the No. 3 shaft. The work is part of a large expansion and improvement program of underground facilities which aims to automate the various operational phases as much as possible while increasing mining production as well.

From 1 000 to 1 325 feet

The installation of new cables during the July work stoppage will allow the ore cage to descend to a depth of 1 325 ft. Extensive expansion will be carried out at this level until 1981, the ultimate goal being ore extraction from the section of orebody located between 1 000 and 1 325 ft., that is, at the second and third levels of shaft No. 3. At present, the orebody has been mined to a depth of 1 000 ft.

Platforms, tracks, electric signals, gates, etc. will gradually be installed at the third level to allow the ore cars to circulate as soon as excavation of the tunnels is completed. The cars will then be hoisted in the ore cage to the surface where the primary crusher is located.

28% increase

"It has become necessary to carry out this work in order to meet the projected 28% increase in production as of January 1979. We must also maintain a steady ore reserve and anticipate mining of a new section of our orebody", stressed company president, Marcel Dorais. Production at Les Mines d'amiante Bell, which is at present 16 500 tons of

Bell increases its production capacity

raw ore per week, will reach 22 500 tons as of January 1979. The work-week tempo for underground operations will increase from 11 shifts to 15, on a 5-day basis, while the mill will maintain the same production rate of 3 shifts, 6 days per week.

Plans to excavate and expand the new part of the orebody are designed to automate the mining methods; however, the ore extraction methods will remain approximately the same.

At present, the company uses the conventional mining method of ore extraction, this being block caving and funnels opening onto the grizzly. According to the grizzly method, as it is commonly referred to, the force of gravity pulls the ore towards gratings where it passes through steel bars, which are set 19 inches apart, the ore then falls into chutes and is hoisted to the cars. Lumps of ore that are too large to pass through the gratings are drilled and blasted. This method is still being used to extract ore at depths of less than 1 000 ft.

The Shuttle loader that will transport ore from the draw point to the grizzly in the underground mine of Les Mines d'amiante Bell.

New method

Mining of the section at a depth of 1 000 to 1 325 ft. and of a section located at the western end of the deposit will be carried out by means of block caving of ore at lower subterranean levels. Sections of ore-body will be mined and connected horizontally to new tunnels where excavation will begin in November. According to the current method, each draw point is connected to a grizzly; according to the new method developed by company engineers, a single grating will be connected to about 20 draw points, considerably reducing the dust emission caused by the falling ore. The latter will be carried from the draw points to the grizzly by new vehicles, the shuttle loaders. In addition, drilling and secondary blasting of large lumps of ore will be gradually phased out as a hydraulic hammer will break up the latter.

In a few months, the ventilation capacity in the underground facilities will increase by 60 000 c.f.m. In fact, once new ventilators have been installed, capacity will go from 90 000 c.f.m. to 150 000 c.f.m.

The company has spent more than $28 million to modernize facilities since it began its modernization program in 1966. A considerable portion of this amount has been used to improve health conditions on the work site.

New building

The company has recently begun the construction of a new office building in which the administration and engineering departments will be located. With completion, projected for the end of the year, the building will house approximately 75 people, and cover an area of 25 000 sq. ft. The building's exterior covering will be made of asbestos-cement material and bricks in order to demonstrate the numerous possibilities that asbestos-cement materials can offer from both an aesthetic and a practical viewpoint.

At present, Bell employs 500 people, and has an annual production capacity of 58 000 tons of asbestos, which will reach 72 000 tons in 1979. Les Mines d'amiante Bell used open-pit mining until 1952, at which time it switched to underground mining.

L'Association des mines
Its role, objectives

History

Québec asbestos mining companies have been grouped as an association for more than 46 years. This association was called "Quebec Asbestos Producers Association" until 1948, when it adopted its present name: "Association des mines d'amiante du Québec".

More precisely, it was on January 20, 1931, through the initiative of the then Québec Minister of Mines, J. Edouard Perreault, that the asbestos mining producers first met with the purpose of arriving at an agreement to standardize the grades and classifications of asbestos crysotile fibre mined in Québec soil. After numerous meetings held from January to September 1931, a consensus was reached with respect to a uniform official classification of the grades and types of fibre.

Following these negotiations and the agreement which was to give rise to the Québec Standard, *the asbestos producers decided to form an association in order to develop a spirit of cooperation amongst the companies and to work together with the purpose of tackling some of the problems which were common to their industry.*

Role and objectives

The AMAQ is comprised exclusively of Québec asbestos mining companies. Membership is voluntary.

Since its inception, the Association has aimed at encouraging a spirit of collaboration among its members, at maintaining and enlarging a spirit of cooperation and a constant liaison with the other associations, with the labour milieu and with the public authorities, for everything relating to health and hygiene at work, to the environment and to labour relations.

The Association also coordinates the asbestos mining industry's efforts to help establish and maintain uniform standards regarding the quality of the fibres.

In the fields of health and hygiene at work, of the environment, it encourages and supports technological research programs, and scientific and economic surveys.

The Association also provides financial backing for the Institut de médecine du travail et de l'environnement de Montréal which it established in 1966.

These are the role and objectives of the Association. AMAQ's areas of intervention are defined and demarcated with respect to the normal exercise of competition among member-companies in the domestic and international markets, and to the Canadian, American and international laws and regulations concerning trusts, cartels and competition.

The member-companies, which are themselves concerned with protecting the interests of their respective shareholders, are mindfut that the Association does not exceed its role.

Structure and

The Association is governed by a Board of Directors consisting of the Chief Executive Officers of member-companies who elect amongst themselves a President whose term does not exceed two consecutive years.

The current President of AMAQ is *M. J. Messel,* President of Lake Asbestos, whose term was renewed in January 1978. The other Board members are *Marcel Dorais,* Vice-President, President of Les Mines d'Amiante Bell; *J.R.M. Hutcheson,* Director, Chairman of the Board of Canadian Johns-Manville; *M. M. Prus,* Director, President of Les Mines Carey Canadienne. The Executive Vice-President, *P.A. Filteau,* is Secretary of the Board of Directors.

The committees

The Board is assisted in its work by nine committees which each have specific duties. These committees are the following:

- **Committee for the Uniform Classification and Grading of Fibre,** which sees to the strict application of the *Québec Standard;* Chairman: **Keith S. Jackson,** Vice-President of mineral processing, Les Mines d'Amiante Bell;
- **Committee on the Environment,** which is devoted to the constant improvement of air cleanliness in the mines and mills; Chairman: **Lionel Pluze,** Technical Advisor to Lake Asbestos;
- **Committee of Occupational Health and Hygiene** which is involved in all matters related to workers' health, occupational medicine and industrial illnesses; Chairman: **Dr. Michel Lesage,** Medical Director of the Association;

ɛs d'amiante du Québec

ɛs and functioning

ıd functioning

- **Committee of Workmen's Compensation and Accident Prevention;** Chairman: **M. W. Bonneville,** Safety Director, Canadian Johns-Manville;
- **Industrial Relations Committee;** Chairman: **R.B. Gresham,** Manager of the Jeffrey mine, Canadian Johns-Manville;
- **Traffic Committee** which is responsible for negotiating contracts with shipping, railway and trucking companies for the transportation of fibre; Chairman: **R.P. Gagnon,** Vice-President, Sales, Lake Asbestos;
- **Legislation and Taxation Committee** which studies all new laws with respect to mining rights, income tax and taxes on products which are essential to the mining industry; Chairman: **R.W. King,** Controller, Les Mines Carey Canadienne;
- **Technical Committee** which devotes itself to researching methods of controlling the quality of asbestos fibre; Chairman: **E.J. Day,** Superintendent, Quality Control, Canadian Johns-Manville;
- **Public Relations Committee;** Chairman: **Paul A. Filteau,** Executive Vice-President of the Association.

Consultants

The Board of Directors uses external services for assistance and counselling in legal and public relations matters. The Association's legal advisor is **Philippe Casgrain, Q.C.,** of Byers, Casgrain, McNally, Dingle, Benn & Lefebvre, while the public affairs consultant is **Yvon Turcot,** President of Intercommunica.

Offices with distinct orientations in four cities of Québec

With the recent installation of its environmental protection services in Thetford Mines, l'Association des mines d'amiante du Québec now has premises in four cities in Québec, i.e. in Québec, Montréal, Sherbrooke and Thetford Mines.

Québec

In Québec, at the AMAQ head office, an Executive Vice-President attends to the day to day operations of AMAQ, acts as liaison officer between member-companies, other associations and public authorities, coordinates activities of all the committees of the Association, and ensures the application of general policies and all decisions made by the Board of Directors.

Since 1976, the Executive Vice-President of AMAQ has been Paul Filteau, Mining Engineer, who acts, as it were, as agent for the Board of Directors, of which he is also the Secretary. Before the position of Executive Vice-President was created, Mr. Filteau, who is the first to hold the title, pursued more or less the same functions as General Manager for 13 years.

The Executive Vice-President of AMAQ, Paul Filteau, and his secretary, Viviane Bouchard.

L'Association des mines d'amiante du Québec

... Offices with distinct orientations ...

Montréal

The AMAQ office in Montréal essentially attends to matters of occupational health and hygiene at work, under the direction of Dr. Michel Lesage, Medical Director of the Association since 1974 and President of the Committee on Occupational Health and Hygiene. The work carried out by this Committee and by the Medical Director involves all aspects of occupational medicine and industrial illness: research, prevention, epidemiological studies, diagnostic methods and means, legislation, etc.

The medical direction is in close contact with international organizations, groups and institutions that are devoted to occupational medicine and the improvement of health among workers; it maintains a continuing program of information exchange in this field. The Committee and the Medical Director, who work in close collaboration with the Scientific Committee of the Institut de médecine du travail et de l'environnement, inform and advise member-companies with respect to the setting up of programs aimed at eliminating industrial illnesses and promoting the worker's physical and mental well-being.

Dr. Michel Lesage, AMAQ Medical Director.

Sherbrooke

In Sherbrooke, the AMAQ owns and manages a laboratory located

In Sherbrooke, Marcel Cossette manages the AMAQ laboratory.

on the campus of l'Université de Sherbrooke. It is in this laboratory, under the direction of Marcel Cossette, Chemical Engineer, that analyses are made of fibre samples collected in the mills of member-companies. These analyses aim to ensure the maintenance of uniform standards regarding the quality of the fibres, and to verify that they strictly comply with the specifications and classifications of the *Québec Standard*, known and accepted throughout the world as a guarantee of quality.

Samples analyzed in the Sherbrooke laboratory are collected each month from all the asbestos mills in Québec by a technician employed by AMAQ, Maurice Doyon, of Thetford Mines, who reports to the Committee of Uniform Classification and Grading. This Committee, whose Chairman is Keith S. Jackson, Vice-President of Mineral Processing, les Mines d'Amiante Bell, is ultimately responsible for the control of standards and quality, in accordance with the *Québec Standard*.

Thetford Mines

The AMAQ office in Thetford Mines is basically technically oriented. The Association's technical advisor, Marc Trudeau, Master of Science, coordinates all activities related to noise and dust control, while pursuing a research program on asbestos fibres and other material in suspension in the waters of the Bécancour and Nicolet rivers. Serving at the same time as a data, analysis and research center, the Thetford Mines office is responsible to the Association's Committee on the Environment. This Committee is devoted to the steady improvement of air cleanliness in the asbestos mines and mills and in the surrounding area. It also carries out the technological exchange program which has been agreed upon by member-companies in this field.

The work of the Committee on the Environment, whose Chairman is Lionel Piuze, technical advisor to Lake Asbestos, is divided into different subcommittees whose assignments are coordinated by Mr. Trudeau.

Marc Trudeau, Technical Advisor for AMAQ.

Institut de médecine du travail et de l'environnement

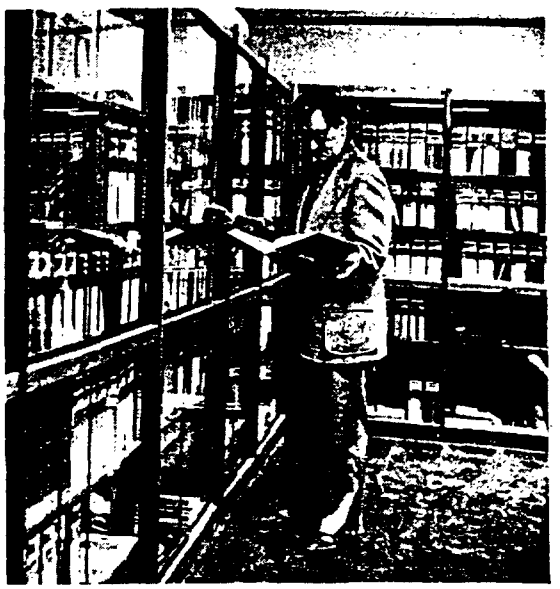
The AMAQ founded the Institut de Médecine du Travail et de l'Environnement de Montréal in 1966 with the purpose of promoting the advancement of science in the field of biological effects of asbestos, and encouraging research aimed at eliminating the dangers inherent in asbestos dust, as much in the environment as on the work sites.

The member-companies of the Association provide financial backing for the Institut jointly with four other asbestos mining companies which are also members. They are: la Société Asbestos Limitée, of Montréal, Cassiar Asbestos Corp., of British Columbia, Advocate Mines Limited, of Newfoundland, and Chrysotile Corp. of Australia, Pty, Ltd.

The Scientific Committee of the Institut, which is made up of Canadian and American scientists completely independent of all companies related to asbestos mining, has approved to date more than 30 important research projects throughout the world, totalling more than $5 million in grants.

The organizations, institutions and universities receiving grants from the Institut have total freedom and independence. In addition, research findings are published regularly whatever the conclusions may be.

The Scientific Secretary of the Institut is Dr. Premysl V. Pelnar who oversees activity coordination and handles daily management.



Dr. Premysl V. Pelnar, Scientific Secretary of the Institut.

Québec Standard

Québec asbestos mines produce close to 150 types of fibre. As some fibres are better suited to certain manufacturing processes, it is essential that users have precise knowledge of the various categories and classes of fibre placed on the market by asbestos mining producers. Hence the importance of a rigorous and uniform classification system.

The official classification of l'Association des mines d'amiante du Québec is recognized and accepted throughout the world. It is called the *Québec Standard.* The *Québec Standard* for asbestos fibres classifies the fibre according to length, grade, and distribution.

Today, the *Québec Standard* applies to about 32 types of fibre which are grouped into 4 or 5 different categories or grades.

Verification of the grades of crysotile fibre produced in Québec constitutes one of the most fundamental duties of the AMAQ.

Canada Post Postage paid / Postes Canada Port payé
Third class / Troisième classe
B-683
Montreal, P.Q.

Mesothelioma: an important discovery

Due to the unexpected cases of mesothelioma reported amongst villagers of Karain and Urgup in Turkey, two areas where homes and caves contain zeolite formations, the entire question of pulmonary disease as related to mineral fibres might be raised once again. In fact, there are no asbestos-related activities in these villages.

This was revealed in a report presented during a symposium organized by the New York Academy of Sciences in New York from June 21 to 30. The report is based on a study made by Dr. Peter Elmes of the Pneumonoconiosis Unit, Llandough Hospital, in Penarth, Wales, who compiled the data from Turkey.

Zeolite

The cases of mesothelioma found in the two Turkish villages were related to zeolite, and not to asbestos. Zeolite, a member of a group of minerals resembling feldspar, is used in various consumer goods, including water purification and sludge treatment products.

Extraction of the mineral is carried out on a large scale in the southwestern United States. This mineral could set off a new wave of concern in light of the cases found in Turkey, even though there may still be no cause for alarm.

Zeolite can be found in its natural state in caves that serve both as homes and warehouses for some villagers who live in the region where the cases of mesothelioma have been reported. Zeolite is also used there in the construction of homes. This is not a mining area, and the cases of mesothelioma are not related to any particular occupation or trade. Victims, which also include children, are village residents.

Oddly enough, some villages where zeolite is found did not report any cases of mesothelioma. A study by means of electron microscopy of the soil and dust in the streets of the villages where the desease had struck showed that fine fibres were present in the chabazite, the main component of zeolite in this region. However, according to the study, such fibres were not found in villages where there were no cases of mesothelioma.

Number of cases

An article, published in the Thorax Journal by a group of investigators from the Hacettepe University School of Medecine and the Institute of Mineral Research and Exploration in Ankara, provides more details on the subject. The group reports that in 1975-76, 11 of the 575 residents of Karain died as a result of pleural mesothelioma, and that five cases of fibrosing pleuresy were also found. There were 25 cases of mesothelioma in Karain during the previous five years.

According to the investigators, who were under the direction of Dr. Y.I. Baris of the Medical School, asbestos is not found in the local rock or soil, nor is it handled in the village, but a few fibres were found in the water.

Mesothelioma is a disease which until the present time was associated solely with asbestos, but according to a Turkish government official, the discovery of cases associated with zeolite could create a whole new controversy.

Mr. E. Martinez
Central Res. Dept.
ASARCO
South Plainfield, N.J.
07080. U.S.A.

Bulletin

This BULLETIN is published by l'Association des mines d'amiante du Québec, 1130 Sherbrooke Street West, Suite 410, Montréal H3A 2M8.

The Post Office Department in Ottawa has authorized postage paid in cash and forwarding of the publication by third class mail.