

backs incidental to bad weather and the long winter season.

The extraction of the asbestos involves the removal of a great deal of valueless serpentine rock. Frequently as much as ten or even twenty tons of waste is removed to secure one ton of asbestos ore. This naturally adds considerably to the cost of the finished product.

The crude asbestos, as mined, is a rough block often containing numerous impurities, such as sand, rock, traces of iron and other metals. All of these must be removed before the actual manufacturing stage is reached.

From the floor of the mine the crude material is conveyed by a cable-way to the ore bins, where it is roughly sorted into various grades.

The finest pieces are first hand-treated with hammers, which removes the external impurities. This process is known as "cobbing." The lower grades are sent direct to the crusher, following which in both instances they go through the following additional processes: Crushing by machinery of the Blake or rotary types; drying by centrifugal machinery to extract the superfluous moisture; fiberizing or breaking up the fiber into threads in similar manner to the beating of flax and hemp.

The fiberized asbestos goes thence to a "cyclone," which stirs it up, agitates it violently with blasts of air and in the end tosses the lighter silker fibres one way and the coarser ones another, while the dust and refuse fall out below.

From the "cyclone" the fine fibres drop into a shaker, which further agitates and separates them. Thence they are lifted by powerful fans. The finer particles travelling farthest are caught in one compartment while the less fine are separated into various grades. This completes the milling process and the crude asbestos is now ready for manufacturing purposes.

Chemically, asbestos is a silicate of magnesia, with slight traces of other minerals, combined with a variable percentage of water. The larger the proportion of combined water the longer and more flexible are the fibres. It is this quality which makes the Canadian asbestos superior to any other.

Asbestos possesses a faculty unique among minerals, that of being spun and woven into thread and cloth. It is also capable of being felted, but unlike all organic fibres which are tubular in their formation and therefore easily twisted without breaking, asbestos is non-tubular and for a long time this threatened to be a stumbling block in the way of its manufacture into textiles.

It is certain the ancients overcame this trouble by mixing a vegetable fibre with the asbestos, but for modern purposes this is impossible. The difficulty has now been successfully overcome by special machinery, so that asbestos is now spun into thread, twisted into cord of considerable strength and woven into a variety of fabrics.

The list of possibilities of asbestos manufacture is far from being exhausted by textiles.

The engineer is indebted to it for packings, for valves, pistons and joists, non-conducting coverings for boilers, pipes, steam chests, and all heated surfaces, brake blocks, stack and flue ducts and linings and a variety of minor articles. Wherever heat begins to show a tendency to become unruly, asbestos can be depended upon to curb it.

The electrician and electrical engineer owe a great deal to the introduction of asbestos because it is the base of many of the best non-conductors of electricity yet discovered.

More recently, the H. W. Johns-Manville Company have introduced two kinds of asbestos "wood," which is being largely used for switchboard purposes and a variety of other electrical uses, including station, street car and railway panelling, and flooring, telephone and motion picture booths, etc., for which its ease of working, lightness and fireproof qualities make it specially suited.

The field for asbestos products is being constantly widened by modern industrial expansion due to its adaptability and its powers of resistance to heat, oil, water and acids, combined with a capacity for almost indefinite wear.

We are indebted to the H. W. Johns-Manville Co. for the above brief outline of the industry and to the Mines Branch, Department of Mines, Ottawa, for the following list of Canadian developments:

Firm.	Address.	Location of mines.
Asbestos Corporation of Canada, Ltd.	Montreal	Megantic Co., Que.
Black Lake Asbestos and Chrome Co., Ltd.	Toronto	" "
Johnsons Asbestos Co., Ltd.	Thetford Mines, Que.	" "
Bell Asbestos Mines	Ambler, Pa.	" "
The Martin Bennett Asbestos Mines, Ltd.	Thetford Mines, Que.	" "
The Jacobs Asbestos Manufacturing Co., Ltd.	Montreal	" "
The B. & A. Asbestos Co.	Robertsonville, Que.	" "
The Berlin Asbestos Co., Ltd.	Berlin, Ont.	" "
The Windsor Asbestos Co., Ltd.	Tecumseh, Ont.	" "
Asbestos and Asbestic Co., Ltd.	Asbestos, Que.	Richmond Co., Que.
The Quebec Mines and Metal Co.	Beauceville, Que.	Beauce Co., Que.
Broughton Asbestos Fibre Co.	"	" "
Eastern Townships Asbestos Co.	Beauceville, Que.	" "
The Frontenac Asbestos Co., Ltd.	Quebec, Que.	" "
Boston Asbestos Co., Ltd.	St. Ann de la Perade, Que.	" "
The Ling Asbestos Co., Ltd.	East Broughton, Que.	" "
Montreal Asbestos Co., Ltd.	Montreal, Que.	" "
Brome County Asbestos Co., Ltd.	Montreal, Que.	Brome Co., Que.
Mackay Asbestos Co.	"	" "
Pharaoh Asbestos, Ltd.	Mansonville, Que.	" "
Robertson Asbestos Manufacturing Co.	Quebec, Que.	Megantic Co., Que.
W. H. Lambly	Inverness, Que.	" "
Brompton Lake Asbestos Co.	Montreal, Victoria Square	Richmond Co., Que.
The Danville Asbestos Granite Co., Ltd.	Danville, Que.	" "
Belmina Consolidated Asbestos Co., Ltd.	"	Wolfe Co., Que.