

Asbestos: Miracle or menace?

Fire hoses. Siding and roofing shingles. Seals on your oven doors. Floor tiles. And the brakes and gaskets of the family car. All share something in common . . . something produced by J-M since its beginnings in 1858.

The products mentioned above all contain asbestos fiber. Asbestos has many other uses, too. It is combined with cement to produce pipe that carries water to homes, offices and shopping centers and sewage to treatment plants.

Combined with latex, asbestos makes a strong flexible backing for vinyl flooring. With complex formulations of resins asbestos is the preferred material for use in friction products such as brake linings and clutch facings for automobiles, trucks, earth movers, locomotives and elevators. Asphalt binds asbestos felts for durable roofing materials.

Asbestos, in fact, is used throughout the world in thousands of different types of products and, in practically all of those uses, the asbestos is bound in by cement, latex, plastics, resins or asphalt.

No other natural or man-made material shares the unique properties that make asbestos the desirable, economical choice for a multitude of uses where protection against the hazards of heat and fire are needed.

It's non-combustible and resists heat generated by friction.

It insulates against heat, cold, noise and will not conduct electricity.

Its tensile strength is as great as high quality reinforcing steel. But, unlike steel, it resists corrosion. It can be woven into flexible textiles, formed into rigid panels and made into paper as a base for multiple uses.

Asbestos occurs naturally in deposits throughout the world and has been mined continuously since it was discovered centuries ago.

The Athenians used it in wicks for continuous burning lamps in their temples. Emperor Charlemagne helped prevent a war by astounding and striking fear in audiences with "miraculous" demonstrations of its non-burning qualities. Marco Polo wrote of it as "a magical cloth" used by Eastern Siberians. And it's believed that knights found asbestos gave added strength and fire resistance to their body armor.

Throughout the 1900's, asbestos continues to perform "miracles" and to save countless lives. Following a disastrous fire in Vienna's Ring Strasse Theatre — where 800 lives were lost — the use of asbestos curtains, flooring and other construction was mandated in all U.S. theaters and other public places.

In World War I and II it was widely used in warships to provide fire protection and improved boiler and fuel efficiency.

Race car drivers, industrial welders and others have protected themselves over the years with asbestos-woven clothing.

And beginning in the 1960's, asbestos was applied to heat shields of space missiles in the NASA program

to protect astronauts from the searing heat of their reentry through the earth's atmosphere.

"Asbestos products have served and continue to serve valuable, often life-saving purposes in our modern technological society," says Walt Cooper, J-M's manager of Environmental Communications. "We now know that excessive exposure to air-borne asbestos in the past resulted in increased health risks for some people. We also know that asbestos can be used today to preserve lives and property under conditions that need not create a future disease problem."

Today, while demand for asbestos remains relatively flat in the more industrialized countries of the world, demand continues to grow in many other countries, particularly in Brazil, India and Southeast Asia.

"Two of the first needs of developing countries," explains Monroe Harris, senior vice president, "include shelter for citizens and healthful water and sewer systems. Providing these with asbestos-cement products does not require sophisticated technology. It requires for the most part simply the importation of asbestos fiber — a material much less costly than substitute building materials such as steel, imported wood or petroleum-based plastics."

The advantage of asbestos-cement sheet and pipe is that it holds up under any adverse climatic condition, including that of the tropical zone and desert lands. Steel or wood, by contrast, are quickly attacked in such climates. Further, asbestos is by far the most cost-effective material that developing countries can use.

Another key consideration to today's use of asbestos — in developing and developed countries — is the low energy cost of producing asbestos-containing materials.

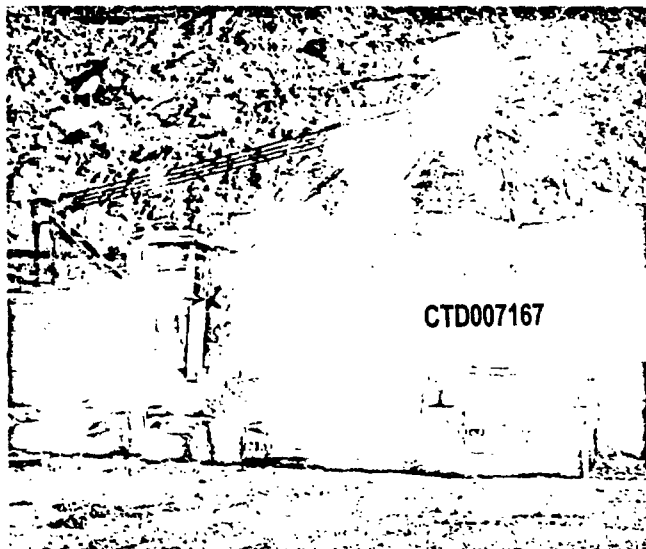
Products made with asbestos require much less energy to manufacture than do alternate products.

Obviously, as energy costs mount, asbestos cement will become more and more cost effective in comparison to its alternatives. Although a great deal of effort has been spent seeking alternatives, asbestos continues to have many hard-to-replace qualities.

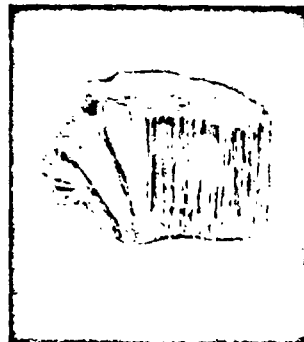
"Nowhere else can you find or has anyone made a material that's non-combustible, resists all conditions of weather, and has generally provided outstanding long-term performance," adds John Swensen, Pipe Division general manager. "And," he adds, "in the vast majority of its uses, asbestos is locked in by cement, resins, plastics, latex or asphalt so that the hazard of excessive inhalation of air-borne asbestos fiber is virtually eliminated."



J-M remains the largest producer of asbestos fiber outside of the Soviet Union. Over 2,000 employees are involved in asbestos mining and milling at our Jeffrey Mine in Canada.



J-M has been producing asbestos fiber for many important uses since the mid 1800's.



Asbestos is non-combustible and resists heat generated by friction. A chunk of unrefined asbestos is

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J-M Today is published every other month by the Corporate Relations Department for Johns-Manville employees. Address all correspondence to Editor, J-M Today, Johns-Manville Corporation, Ken-Caryl Ranch (2-28), Denver, Colorado 80217

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