Undeniable FACTS about chrysotile

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Introduction

Throughout the whole world, very few natural or synthetic substances have initiated as much debate as the use of chrysotile. Very few products containing natural or man-made fibres, have been studied as closely as the naturally occurring asbestos fibres.

The evolution of knowledge obtained from the thousands of published studies and reports is impressive, especially in the last two decades when advanced technology made it possible to understand how breathable fibres can affect the human body, in particular, which fibres and at what dose.

For many years now, we have witnessed a commercial war claiming to rely on scientific or technical facts. Most of the time, the crusade against chrysotile relies on media tactics that unfortunately support other interests than health.

Too often, regardless of the scientific or technical data which supports the safe use of chrysotile, detractors and activists simply play with people's emotions.

Since the chrysotile debate centers on the health and safety of the general population, as well as the workers, it is then not unusual to hear about drastic asbestos ban proposals.

This brochure is about facts as opposed to perceptions. While it cannot be as exhaustive as the thousands of scientific papers that have been written on this subject, it does attempt to give readers a comprehensive overview of today's chrysotile.

Chrysotile in the 21st Century

IN A FEW WORDS

- Chrysotile is a naturally occurring fibrous silicate mineral which does not burn or rot. It is found throughout the world like in Australia, Brazil, Canada, China, Europe, Kazakhstan, Russia, South Africa and the United States of America;
- It is possible to trace written documentation of the use of chrysotile back to the days of the Roman Empire;
- It is resistant to most chemicals, soluble in acid, it is flexible and possesses high tensile strength;
- The word asbestos is a commercial term to indicate any fibrous mineral with a fibrous form. In fact, there are many types of asbestos fibres which are divided into two families: the serpentine and the amphiboles;
- All the amphibole mines, located mainly in South Africa and Australia, were closed in the late 20th century;
- Both types of asbestos (serpentine and amphiboles) should never be included in the same category.

THIS BROCHURE IS ABOUT FACTS

Chrysotile: A Natural Mineral Fibre

Chrysotile is a naturally occurring fibrous silicate mineral which does not burn or rot. It is found throughout the world, such as: Europe, Australia, Brazil, Canada, China, Kazakhstan, Russia, South Africa, the United States of America, etc. It is resistant to most chemicals, soluble in acid, it is flexible and possesses high tensile strength. This unique combination of extraordinary properties makes chrysotile an extremely useful material which has been marketed for many decades. Chrysotile has been used as a major component in lightweight, reinforced cement products, friction materials and high temperature seals and gaskets, etc.

Chrysotile has been known for over 2000 years, being used initially for burial cloths, oil lamp wicks and other textiles. But it is only in the 19th century that chrysotile fibre was first mined commercially in Russia, Italy and Canada.

From Asbestos to Chrysotile

Why do we refer to chrysotile and not to asbestos? Because the word asbestos is a generic word and commercial term to indicate any silicate, fibrous mineral with a fibrous form. In fact, there are many types of asbestos fibres which are divided into two families: the serpentine and the amphiboles. Except for sharing the same commercial name – asbestos –, being non-flammable and having a fibrous nature, these two families are very different. Their chemical composition, their properties and industrial uses are drastically different from one family to the other. Not surprisingly, their dangerous and potential adverse health effects are also radically different.

In fact, the two types of asbestos (serpentine and amphiboles) should never be included in the same category. There is generally a consensus in the scientific community, as stated in the latest (2004) World Health Organization (WHO) report, that serpentine and amphiboles should always be clearly differentiated.

Chrysotile comes from the serpentine group, whereas the other commercially known fibre types, tremolite, amosite and crocidolite are from the amphibole group.

A Brief History of Chrysotile and Amphibole Consumption

The word asbestos comes from the Greek word meaning “inextinguishable” or “indestructible”. The name of chrysotile, one of the most common forms of asbestos, is derived from the Greek words “chrysos” (gold) and “tilos” (fibre) or “gold fibre”.

It is possible to trace written documentation of the use of chrysotile back to the Roman Empire. However, evidence of the use of asbestos in pottery and clogging of log dwellings, dating back 3000 BC, has been found from archaeological digs in Scandinavia. Chrysotile was used by many different cultures for hundreds of useful purposes. The use of chrysotile fibres on a true industrial scale began in Italy, early in the 19th century with the development of textiles. By the end of the 19th century, significant chrysotile deposits had been identified throughout the world and exploitation had begun in Canada, Italy and Russia. Mining of amphiboles (crocidolite) started in South Africa late in the 19th century.

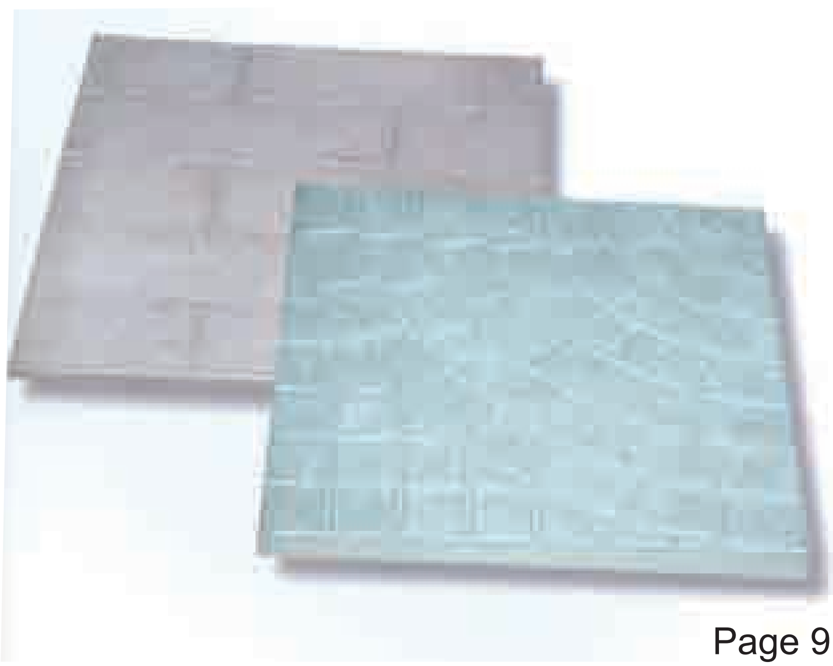
Right at the beginning of the 20th century, the world demand for chrysotile and amphibole fibres grew spectacularly for numerous applications, in particular for thermal insulation. The development of the Hatschek machine in 1904, for the continuous fabrication of sheets from an asbestos-cement composite, also opened an important field of industrial application for asbestos fibres, as did the development of the automobile industry for asbestos brakes, clutches, and gaskets.

World War II supported the growth of all types of asbestos fibre production for military applications, typically in thermal insulation and fire protection. Loose asbestos fibres, or formulations containing asbestos fibres for spray coatings, were widely used in the construction and shipyard industries for fire protection and heat and sound insulation. Such applications were later extended into the residential and industrial construction several decades after WWII, particularly in the development of North America and the reconstruction of Europe, where millions of tons of different types of asbestos fibres were used.

The Many Uses of Chrysotile

The main properties of chrysotile fibres that can be exploited in industrial applications are their thermal, electrical, and sound insulation; non flammability; matrix reinforcement (cement, plastic, and resins); adsorption capacity (filtration, liquid sterilization); wear and friction properties (friction materials); and chemical inertia (except in acids). These unique properties have led to several major classes of industrial products and applications.

The reinforcing properties of chrysotile fibres have been widely utilized in fibre-cement products, mostly by the construction and waterworks industries. Products such as boards, pipes, and sheets represent, by far, the largest worldwide industrial consumption of chrysotile fibres, an estimated 80% of the market in 1988. With market changes, chrysotile-cement products now probably account for more than 90% of total fibre sales.



Finally, the combined reinforcing effects and high adsorption capacity of chrysotile fibres were exploited in a variety of applications to increase dimensional stability, typically in vinyl or asphalt tiles and asphalt road surfacing. In recent years, industrial applications involve chrysotile fibres bonded within an organic or inorganic matrix.

Chrysotile-cement products account for the bulk of the world production. In the United States, the major use is in roofing compounds (62%), followed by diaphragms in chlorine manufacturing. Small amounts of chrysotile also are used in the manufacture of some insulation, woven and plastic products.

Chrysotile and amphibole fibres also have been widely used in the fabrication of papers and felts for flooring and roofing products, pipeline wrapping, electrical insulation and textiles, comprising yarn, thread, cloth, tape, or rope. They were also used in thermal and electrical insulation and friction products in brakes or clutch pads.

Scientific Facts about Chrysotile

IN A FEW WORDS

- There is an overwhelming number of published data showing that the mortality experience of workers handling amphiboles is much more severe than that of workers exposed to chrysotile only;

- All chemical substances will exhibit a toxic effect given a large enough dose. If the dose is low enough, even a highly toxic substance will cease to cause a harmful effect;

- Like all minerals and agents that can cause cancer – the International Agency for Research on Cancer has identified 417 agents, mixtures and exposures that are certainly, probably or possibly carcinogenic to humans – the risk is proportional to the exposure level;

- Low exposures to chrysotile do not present a detectable or an unacceptable level of risk to health;

- Chrysotile is cleared rapidly from the lung. Recent animal experimentations (2003 to 2006), performed according to the most stringent protocols recognized by the European Union, show that soon after chrysotile fibres are inhaled, they are quickly cleared from the lungs – in a matter of about 10 days. The amphibole fibres remain in the lung for periods up to a year or more;

- These differences are fundamental in assessing health risk for chrysotile. Talking about "the health effect of asbestos" makes no more sense than asking if "metals present health risks". At low level of exposure, some do, others don't. It is the same with asbestos fibres : recent updates of epidemiological studies (for chrysotile) are consistent with a practical threshold level of exposure below which no adverse effects have been detected;

- The fibres usually used to replace chrysotile, such as cellulose, aramid fibres and ceramic fibre, are generally more persistent in lung tissue and therefore potentially more hazardous to health;

- The U.S. Court found a ban of asbestos-containing products unwarranted.

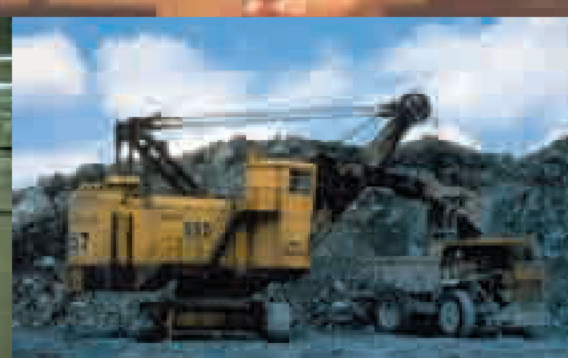
Chrysotile and Amphiboles in Today's World

Current asbestos products and uses are as different from the old ones as night and day. Today, the main type of asbestos extracted, exported and used is chrysotile. The amphibole mines, located mainly in South Africa and Australia, were closed in the late 20th century.

In addition, the industry now only markets dense and non-friable materials in which the chrysotile fibre is encapsulated in a matrix of either cement or resin. These products include chrysotile-cement building materials, friction products, gaskets and certain plastics.

The old products, principally low-density insulation materials, were very dusty and crumbled under hand pressure. Uncontrolled work conditions, work with friable insulation materials and the extensive use of amphibole asbestos fibres in the past, have resulted in asbestos-related diseases. Unlike today's products, old products often contained amphibole fibres (crocidolite and amosite) or a man-made mix of chrysotile and amphiboles. These products are still present in the Western world, and precautionary measures must be implemented to protect everyone against exposure to excessive airborne asbestos dust.

Times have changed: the type of fibres and products marketed are different, and dust control technology has evolved. The use of low-density friable insulation materials has been abolished, and exposure limits for chrysotile are hundreds of times lower than workers' levels of exposures of the past.



What do we know today about chrysotile and all the asbestos fibres? In fact, we know many things, from their chemical composition, their properties and their potential health effects on humans. Because all asbestos fibres have been accused - wrongfully or with reason – of being responsible for the death of many workers. Many scientists from all over the world have brought to light many nuances. Consequently, the understanding of the mechanism and conditions that provoke respiratory diseases after the inhalation of natural or synthetic fibres are well-known and documented.

There is overwhelming published data showing that the mortality rate experience of workers handling amphiboles is much higher than that of workers exposed to chrysotile fibres only.

The Dose Makes the Poison

In principle, a substance can produce the harmful effect associated with its toxic properties only if it reaches a susceptible biological system within the human body in a sufficient concentration (a high enough dose). The toxic effect of a substance increases as the exposure (or dose) to the susceptible biological system increases. For all chemicals there is a dose response curve, or a range of doses that result in a graded effect between the extremes of no effect and 100% response. All chemical substances will exhibit a toxic effect given a large enough dose. If the dose is low enough, even a highly toxic substance will normally cease to cause a harmful effect. The toxic potency of a chemical is thus ultimately defined by the dose – the amount of the chemical that will produce a specific response in a specific biological system.

"All substances are poisons; there is none which is not a poison.
The right dose differentiates a poison…"

- Paracelsus (1493-1541)

That is to say, substances often considered toxic can be benign or even beneficial in small doses, and conversely an ordinarily benign substance, like water, can be deadly if over-consumed.

Like all minerals and agents that can cause cancer – the International Agency for Research on Cancer has identified 417 agents, mixtures and exposures that are certainly, probably or possibly carcinogenic to humans – the risk is proportional to the exposure level. Good common sense will tell you that many of these substances have a risk of causing diseases only if the exposure is abundant or for a long period of time. It is the case for numerous products we encounter in our everyday occupational or environmental life.

For example, let's mention: alcoholic beverages, manufacture of glass containers, coffee, diesel and gasoline engine exhaust, indoor emissions from household combustion of wood and coal, occupational exposure as hairdresser or barber, nickel compounds, most insecticides, occupational exposure as a painter, certain kinds of salted fish, solar radiation, tobacco smoking and tobacco smoke, wood dust and x-rays, etc.

As we can see, facts are irrefutable: asbestos use – without distinguishing the fibre types (chrysotile and amphiboles) – which increased in the middle of the 20th century, created the problem. During this era, protection measures and appropriate work practices for employees, ensuring them a healthy working environment, were neglected and, too often, practically nonexistent.

The workers extracting and transforming the fibre, installing and maintaining products containing asbestos were then exposed, for many years, to high dust concentrations and this, without appropriate respiratory protective devices. Inhaled in large quantities over long periods of time, asbestos fibres cumulate in the lungs and exceed the capacity of the body to naturally eliminate them. This is followed by a gradual diminution of the corrective action of the lungs. This phenomenon is called asbestosis. It might eventually provoke lung cancer or mesothelioma – another kind of cancer generally associated with asbestos. However, this biological process extends over a period of years (sometimes up to 40 years): this is called the latency period of the disease.

LATENCY

It is, because of this latency period that it is still possible today to diagnose new cases of respiratory diseases, and this, in spite of all the improvements concerning the exposure of workers to fibres in the workplace. Alarming reports of the rise of diseases linked to asbestos (at large) have triggered intense controversy in Europe, especially in northern countries which, before the 1980's, were big users of friable asbestos insulation and, too often, of amphibole fibres. In a nutshell, here is the genesis of the polemic concerning the use of all kinds of asbestos fibres, including chrysotile, the one that presents no real significant health risk when used in a responsible way.

As far as Health Risk is Concerned, why is Chrysotile so Different from Amphiboles?

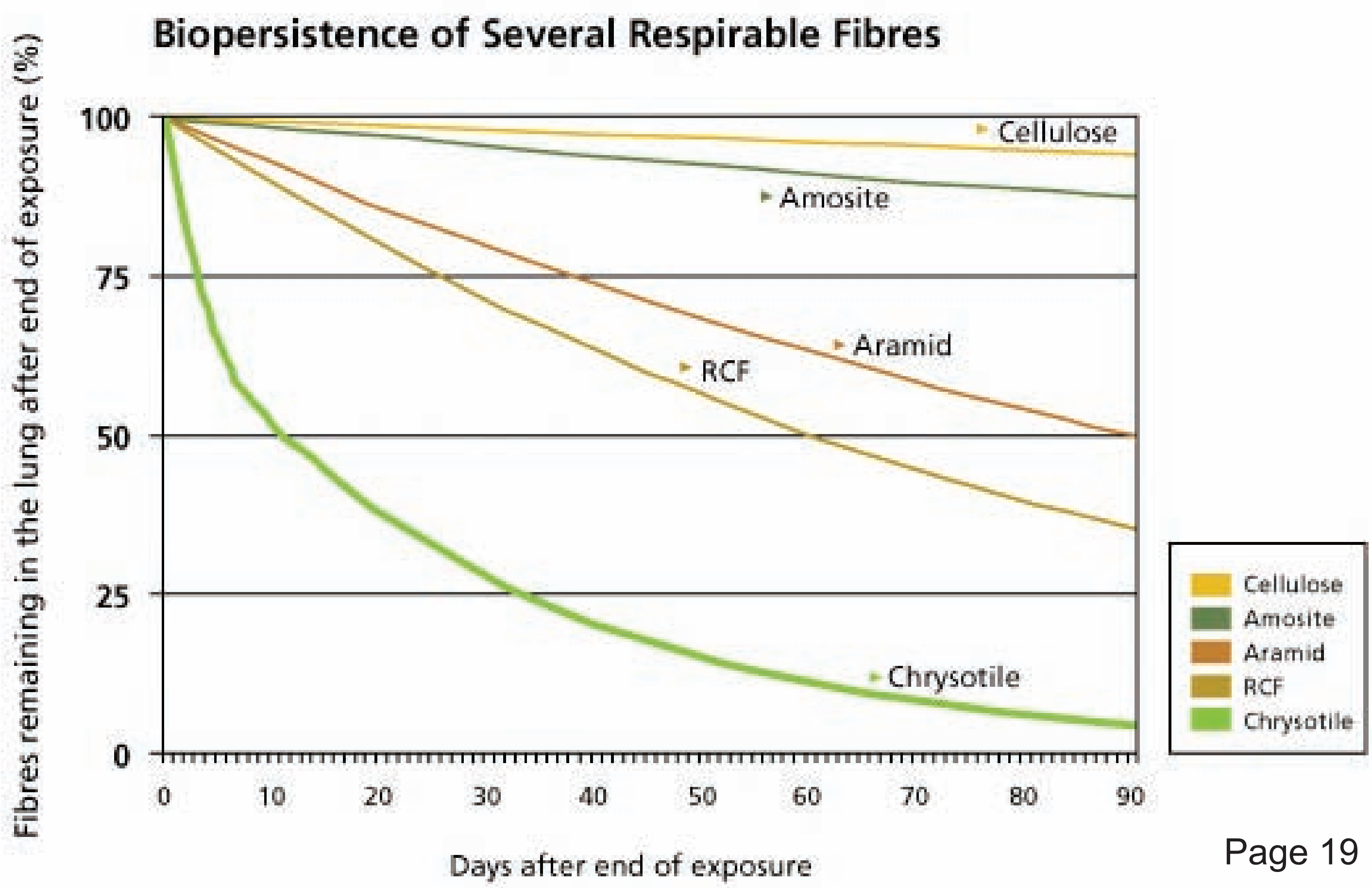
There is growing scientific evidence demonstrating that asbestos induced-lung cancer, such as asbestosis, is a threshold phenomenon. Low exposures to chrysotile do not present a detectable risk to health. Since total dose over time determines the likelihood of the occurrence and progression of disease, studies suggest that the risk of an adverse outcome may be low, even if high exposures are experienced for a short duration.

When any natural or man-made fibrous respirable substances are inhaled, most fibres are expelled, but some can become lodged in the lungs and remain there throughout life. Fibres can accumulate and cause scarring and inflammation. Severe scarring and inflammation can affect breathing and increase the risk of lung cancer. Fast removal of a fibre from lungs decreases the risk of fibre-induced health effects. The ability of a substance to persist in the lung, in spite of the lung's physiological clearance mechanisms and environmental conditions, is known as biopersistence. It is generally agreed that the durability of a respirable fibre is a major factor for the characterization of potential adverse health effects. For example, the European Union specifies in Directive 97/69/EC on the Classification, Packaging and Labelling of Dangerous Substances, that a biopersistence test must be undertaken to evaluate a fibre classification as a carcinogen.

Chrysotile is cleared rapidly from the lung. Recent animal experimentations (2003 to 2006, in Brazil, Canada and the USA), performed according to the most stringent protocols recognized by the European Union, show that soon after chrysotile fibres are inhaled, they are quickly cleared from the lungs – in a matter of about 10 days. However, amphiboles, which resist the acidic environment of the lungs, are not cleared as rapidly. The amphibole fibres may remain in the lungs for periods up to a year or more.

To that effect, the animal experimentations thus bring robust support to many epidemiological observations published in the past. They also support the more recent benchmark publication by Hodgson and Darnton (2000), showing that amphiboles are 100 times more potent than chrysotile. In fact, chrysotile has a much lower biopersistency than most of the other industrial fibres (some celluloses, ceramic fibres, aramid, rock wool and glass wool).

Evidence from morbidity, mortality and lung burden studies supports the concept of a much lower pathogenic potential for chrysotile compared to amphiboles. There are no less than 25 reports, from human studies, published in the last 25 years, pointing to the definite differences in biological effects and potencies of chrysotile and amphibole asbestos varieties. One of the most important studies in terms of cohort dimensions was done by Liddell, McDonald & McDonald in 1997. The results have shown no evidence of increased cancer risk from chrysotile exposure at presently regulated occupational exposure levels (~1 f/ml, 8-hour time-weighted average), as recommended by the Group of Experts convened by the WHO in Oxford (1989).



Is Chrysotile Really a Threat to Health!

These differences are fundamental in assessing the health risk of chrysotile. Talking about “the health effects of asbestos” makes no more sense than asking if “metals present health risks”. At low levels of exposure, some do, others don’t. It is the same for asbestos fibres. Regarding chrysotile, “little excess lung cancer is expected from low exposure level” (WHO, 2004). Whereas amphibole fibres present a serious health risk because of its high biopersistence. Recent updates of epidemiological studies are consistent and concur to a practical threshold level of exposure below which no adverse effects are detectable.

The major difference between chrysotile and amphiboles is related to its chemical composition, its acid-resistant properties and its effects on health. In contrast with amphiboles, chrysotile does not persist in the lungs after inhalation; it is quickly eliminated by the metabolism. A prolonged exposure to high concentrations of chrysotile fibres, namely 20 years and more, is required for a clinical manifestation of pulmonary damage to appear. In the past, such high exposures were frequent; it is no longer the case today. On the other hand, because of their toxicity and their high biopersistency, amphiboles are mainly responsible for pulmonary diseases caused even after a short or a moderate exposure. Today, chrysotile is the only asbestos fibre commercialized under an efficient responsible-use program.

The adverse health effects due to high exposures of undifferentiated asbestos fibres should be attributed to the past, mainly because of very high exposures of amphibole fibres. In Europe and North America, many traditional applications, such as insulation, called for a mix of chrysotile and amphiboles. Buildings and ships insulation were installed by means of pulverization of a mixture of chrysotile and amosite; and pipe lagging and large diameter asbestos-cement pipes required the use of crocidolite. This is fortunately no longer the case today.

The health risks associated with chrysotile exposure concern principally the workplace. However, the risks for the general population, if there are any, are generally "below detection limits". With the implementation of a responsible-use program, maintenance and necessary precautions taken, fibre emissions from modern, high-density chrysotile products, such as friction and chrysotile cement materials, are minimal and do not constitute a measurable risk to the general population, to the workers nor to the environment.

Regarding asbestos-related diseases, the following information is provided, based on the much larger number of diseases observed among workers with other fibres.

First, people who were diagnosed with asbestos-related diseases were exposed to the more biopersistent amphibole types or a mixture of chrysotile and amphiboles.

Second, chrysotile has been used commercially for over a century, often at high exposure levels before the 1960's, while alternative fibres are of recent use.

Third, with today's working conditions using exclusively chrysotile fibres in high-density materials, wet process system and modern technology, pulmonary diseases linked to fibre exposure should be eliminated. Careful consideration of all the facts yields one and only one conclusion: controlled-use is the regulatory policy of choice rather than a comprehensive product ban, not only for chrysotile, but also for most other natural and man-made fibres.

Chrysotile-Free, But Not Risk-Free

The alarmist positions taken by certain European government authorities regarding chrysotile encouraged many companies to transfer to substitute products. This substitution, however, was made more in order to give an impression of safety and concern for workers' health. Moreover, that those same industries and governments avoided using chrysotile in many products in favour of untested substitute fibres should be worrying.

In 1993, a group of experts, convened by the World Health Organization (WHO), issued Environmental Health Criteria 151, which states that all respirable and biopersistent fibres must be tested to check their toxicity and carcinogenicity. In fact, recent studies have shown that many fibres used to replace chrysotile in numerous products may be as hazardous as or even more hazardous than the latter: this is notably the case for some celluloses, fibreglass, rock wools, refractory ceramic fibres and aramid fibres. Again, in 1993, the International Program on Chemical Safety (IPCS) explicitly recommended that exposure to any respirable and durable fibre should be controlled to the same extent as chrysotile. This has still not happened.

In addition to the health problems linked to their handling, many chrysotile-free friction materials may have inferior physical and technical characteristics. Despite higher manufacturing costs than chrysotile-containing products and, despite years of technological adjustments and development, substitute fibre-based friction materials still pose performance problems for certain types of motor vehicles; their technology is not always up to date, resulting too often, in additional risk for workers.

In several countries like Chile, England, Italy and France, chrysotile free products have been sold using smear campaigns against chrysotile, resulting in its prohibition; thereby opening up the market to new locally made products and substances for which many technical problems are surfacing as their use becomes more widespread. The replacement fibres usually, such as some celluloses, aramid and ceramic fibres, are generally more persistent in lung tissue and therefore potentially more hazardous to health than chrysotile.

Now, these same countries that have opted for the replacement market, are pressing other nations to follow in their same path. By prohibiting the use of chrysotile under the pretext of protecting workers, there is a real possibility of creating the reverse effect by promoting the industrial development of some unregulated fibres that are potentially more hazardous to the health of workers. Should other countries blindly follow this route? We don't think so.

SUBSTITUTING CHRYSOTILE

In the United States, exploding brake drums on heavy trucks have caused numerous highway fatalities. Diagnoses of truck brake drums in the past few years show that the rupture is often linked to a defective brake shoe. In addition, a study by the EPA and the American Society for Mechanical Engineers shows that it is dangerous to install non-asbestos brake linings on cars initially designed with linings containing asbestos. Through the years, chrysotile-containing brake shoes and linings, have proven their technical efficiency.

It takes up to 50 different substances to replace the various grades of chrysotile fibre used in the gasket industry. Development of these substances and their industrial applications involves very costly research for the industry, and hence, increased costs to consumers. Such a composition may result in sudden rupture and shattering of the gasket, particularly in high temperature, high pressure applications. In addition, it requires more frequent inspections than those usually foreseen for chrysotile-based gaskets which were much more resistant .

Substituting chrysotile by other industrial fibres is technically not impossible. Since several European countries have demanded imports of products that are free of chrysotile, manufacturers have developed production processes that use one or more alternative products.

First of all, finished products manufactured without chrysotile are a lot more expensive and often of lower quality than those containing chrysotile. Many of them have not been scientifically recognized as less hazardous to health. If the European and other countries' markets can allow themself the luxury of using more expensive, less durable and often unregulated products, it is their business, but this fact should be a matter of concern to all and certainly not an example to follow.

Change in Regulations:
A More Rational Approach

Reacting in panic and succumbing to the pressures of the lobbies, some governments hastily adopted laws prohibiting the use, without distinction, of all asbestos fibres. It is particularly the case for the European Union states, but this also happened some time before in the United States. This country (USA) to date remains the most eloquent case of excessive and inappropriate proposed ban which was reversed by a Circuit Court, faced with an absence of justification of the regulation.

In the mid-1980's, public panic over asbestos in buildings - which was later discovered to have been unwarranted – but which prompted the U.S. Environmental Protection Agency (EPA) to propose a ban on most asbestos-containing products. EPA's proposal resulted in a massive compilation of data on the benefits of asbestos in many products, as well as the potential risk for human exposure. Based on this comprehensive record, the U.S. Court of Appeals found such a ban unwarranted because:

No significant human exposures to asbestos fibres would occur if the products were produced and used under controlled conditions;

Substitutes for asbestos-containing products themselves posed potential human health risks that could be more significant than any potential risks from asbestos;

Asbestos-containing products offered significant benefits not offered by substitute products.

The U.S. Court of Appeals underlined that over the next 13 years after its decision, the population could expect more than a dozen deaths from ingested toothpicks, this is more than twice as many deaths as the EPA was hoping to prevent with its US$ 500 million ban on asbestos (all fibre types) pipes, shingles and roof coatings. In fact, with today's measures implemented in the workplace and the low risk of chrysotile fibres, prohibiting the use of chrysotile fibres would probably save no human life.

More recently, in the United Kingdom, the Health and Safety Executive (HSE) has recommended a revision to the regulations relating to chrysotile-containing textured decorative coatings commonly referred to under their commercial name, Artex. This product, similar to chrysotile-cement, is very popular in the U.K. and due to a strict regulation of the European Union, was considered as a dangerous product. Health and Safety Laboratory (HSL) carried out extensive tests on Artex showing that it poses no measureable risk to health.

Occupational Exposure to Chrysotile: Facts

To comply with the international standards, like ILO Convention 162 on the Use of Asbestos and the WHO Oxford Scientific Meeting Recommendations, the vast majority of factories where chrysotile is used are submitted to a periodic control of the airborne dust concentration. This sampling is done either by the industry, a government agency, industrial hygienists and/or the workers representatives. The results are analysed and verified by a qualified laboratory.

In 2006, a survey was undertaken in 47 industries, from 12 countries, producing or using chrysotile in their manufacturing process. This represents 12,000 workers. Overall, without distinction of specific activities, almost all workers (99.8%) were benefiting from a clean working environment where the airborne dust was below the 1 fibre/ml standard recommended by national authorities and the WHO. Very few industries can boast of such a remarkable achievement in occupational hygiene!

Myths and Perceptions about Chrysotile

IN A FEW WORDS

- It is agreed that asbestos is one of the most studied substance;
- The improvements in both the fibre extraction processes and the products manufacturing took many years to be established – and with the fact that diseases associated to high dust exposure could take up to 40 years to develop – human perceptions were then associated with a natural resource that continues to cause deaths (latency period), even if appropriate measures are now in place;
- The latest WHO report, published in 2004, clearly differentiates serpentine and amphiboles;
- Concerning the very existence of a threshold, while there is no consensus about the level at which it is established, the scientific community recognizes that a threshold does exist.;
- By banning a product instead of regulating its use, agencies are sending an inappropriate message that can lead to dramatic reverse effects;
- Today, there are more than 200,000 asbestos claims pending and 100,000 new claims filed in 2003, choking state and federal courts. Who is filing the majority of these claims? According to a recent estimate, people who have no physical impairment account for about 90% of annual claims;
- The 100,000 death estimate is established from a “combined relative risk” for asbestos, therefore attributing a mortality ratio from exposure to amphiboles to workers working with chrysotile. It is as logical as saying that a mix of water and poison would kill people; half of them from the ingesting the poison, the other half from water;

IN A FEW WORDS

- In 1990, the U.S. EPA issued the Green Book, which said asbestos in schools and offices presented a low risk. It noted that improper asbestos removal could increase exposure by stirring up dust unnecessarily;

- British columnists Christopher Booker and Richard North (*Scared to Death: From BSE to Global Warming: Why Scares are Costing Us the Earth*, 2007) demonstrate links between three groups that seem on first sight to have nothing in common : the lucrative plaintiff lawyers in the United States – who were able to claim billions of dollars from the American bankrupt manufacturers and insurance companies – the contractors who lobby in the United Kingdom for a legislation to force the useless and expensive removal of asbestos material in houses, and the International Ban Asbestos Secretariat organization.

The Evolution of Knowledge

It is agreed that asbestos is one of the most studied substances. Even if there is no consensus regarding the fibre exposure level that can cause a pulmonary fibrosis, there is a general agreement on certain realities that were demonstrated, many times, in a toxicological and epidemiological manner.

It is true that the early scientific reports were alarming. It is important to note that, at this time in history, the working conditions for asbestos handlers were unacceptable. First, a large amount of amphiboles were used often mixed with chrysotile. Second, respiratory protective devices for workers were non existent or not available in all factories producing or using fibres. As the improvements in both the fibre extraction processes and the products manufacturing took many years to be established – and with the fact that diseases associated to high dust exposure could take up to 40 years to develop – human perceptions were then associated with a natural resource that continues to cause deaths (latency period), even if appropriate measures are now in place. Due to the latency period, cases of cancer or asbestosis observed today result from past working conditions that no longer exist.

There are many scientific studies demonstrating the effects of the various asbestos fibres on health – they are well-known and widely published. The confusion purposely encouraged by opponents to the safe-use of chrysotile still continues despite the factual information readily available everywhere.

Numerous studies, made over the past several decades, relate to the importance of fibre dimensions (length and diameter) as prerequisites for biological potency, since these two parameters are related to respirability. However, new evidence published over the last 10 years has come from investigations using modern techniques, in particular from mineral analyses performed on lung tissue, also known as “lung burden” studies. As a result, an additional parameter of fibrous materials is now universally recognized as of paramount importance for assessing the pathological potential of inhaled particles: **durability.**

STANDARD MORTALITY RATIO

The “standard mortality ratio” (SMR) is the ratio of the number of deaths observed in the study group or population to the number that would be expected if the study population had the same specific rates as the standard population. An SMR of 1.0 implies that the rates are the same for the population of interest and the standard population.

The 2004 World Health Organization report on asbestos fibres estimates a SMR of 1.04 for chrysotile. This number is based upon exposures as they occured 30 to 50 years ago. The same report stated that “little excess lung cancer is expected from low exposure levels”. Even at a level of exposure that no longer occurs, serpentine is less carcinogenic than arsenic, beryllium, cadmium, diesel exhaust, nickel and silica.

The decision whether to regulate or to ban a product must be based on scientific reality, not on perceptions or to please interests. Some 100 other products and industrial processes are recognized as carcinogenic to humans by the World Health Organization, but they are not banned - they are used carefully.

THIS BROCHURE IS ABOUT FACTS

The scientific community has put its expertise at work to determine circumstances under which fibre inhalation would result in professional diseases and thus, demonstrating a relation between massive exposure to asbestos fibres and workers health-related problems.

Durability is this characteristic that varies widely amongst different respirable particles;

Durability is likely related to the different chemical structures and crystalline habits of mineral particles;

Durability will determine the extent of a key biological phenomenon: biopersistence.

Biopersistence can be described as a period of time for inhaled particles to persist in the lungs before they are eventually dissolved or otherwise cleared.

Biopersistence studies have been carried out on a number of different respirable particles. It has become clear that there are vast differences amongst various respirable fibrous materials presently used by industry, ranging from very short persistence (low durability) to practically indefinite persistence (very high durability).

It is now generally agreed that adverse effects are associated with fibres retained in the lung for long periods rather than with those that are cleared rapidly.

Regarding asbestos fibres, it was confirmed repeatedly that chrysotile displays low biopersistence, as opposed to the amphibole asbestos fibre types displaying exceedingly long biopersistence. In addition, various types of glass fibres also have different solubility and biopersistence characteristics according to their respective manufacturing processes and chemical compositions. A similar observation was reported for Refractory Ceramic Fibres (RCF) and a series of Man-Made Mineral Fibres (MMMF).

More recently, the multi-centre case-control study in Europe by Carel R et al (2006) has shown that occupational exposure to asbestos does not appear to contribute to the lung cancer burden in men in Central and Eastern Europe while in contrast, the lung cancer risk in the UK is increased following exposure to asbestos. The authors suggest that differences in fibre types and circumstances of exposure may explain their results.

Concerning the very existence of a threshold, while there is no consensus about the level at which it is established, the scientific community generally recognizes that a threshold does, in fact, exist. Cohorts representing tens of thousands of workers exposed only to chrysotile at levels of concentration lower than 2 fibres/cm3 (twice today's permissible level in the workplace) have been studied and clearly do not show an inordinate increase in disease in relation to the general population. Industrial diseases related to the use of asbestos are therefore the result of uncontrolled and prolonged exposure to chrysotile or exposure to amphiboles.

The Western World: A Different Issue

While several countries have adopted regulations based on sound science, some influential nations have let perceptions or some other interests guide their approach on the use of chrysotile. In these countries, the dramatic number of asbestos-related occupational diseases, due to the past misuse, and a strong litigation lobby have led some regulatory agencies, mainly in Europe, to adopt a very restrictive regulatory approach or a ban of asbestos, including chrysotile.

This resulted in the expansion of the substitute fibres in products industry. In this area of occupational health, regulatory agencies in all countries have the responsibility to set workplace exposure limits, which will reduce the risk to workers to the lowest possible level. However, this new industry has not always been subject to such restrictive regulations. It is difficult to understand why the anti-asbestos lobby is silent on this subject.

Some countries, while in the process of formulating so-called “revised” recommended asbestos standards, are still using scientific reviews that are far out of date. This is particularly unfortunate, as much new evidence has accumulated over the last few years, with the resulting frequent publications, not only of scientific papers, but also of editorials and commentaries inspired by the need to revisit the issue of risks related to asbestos.

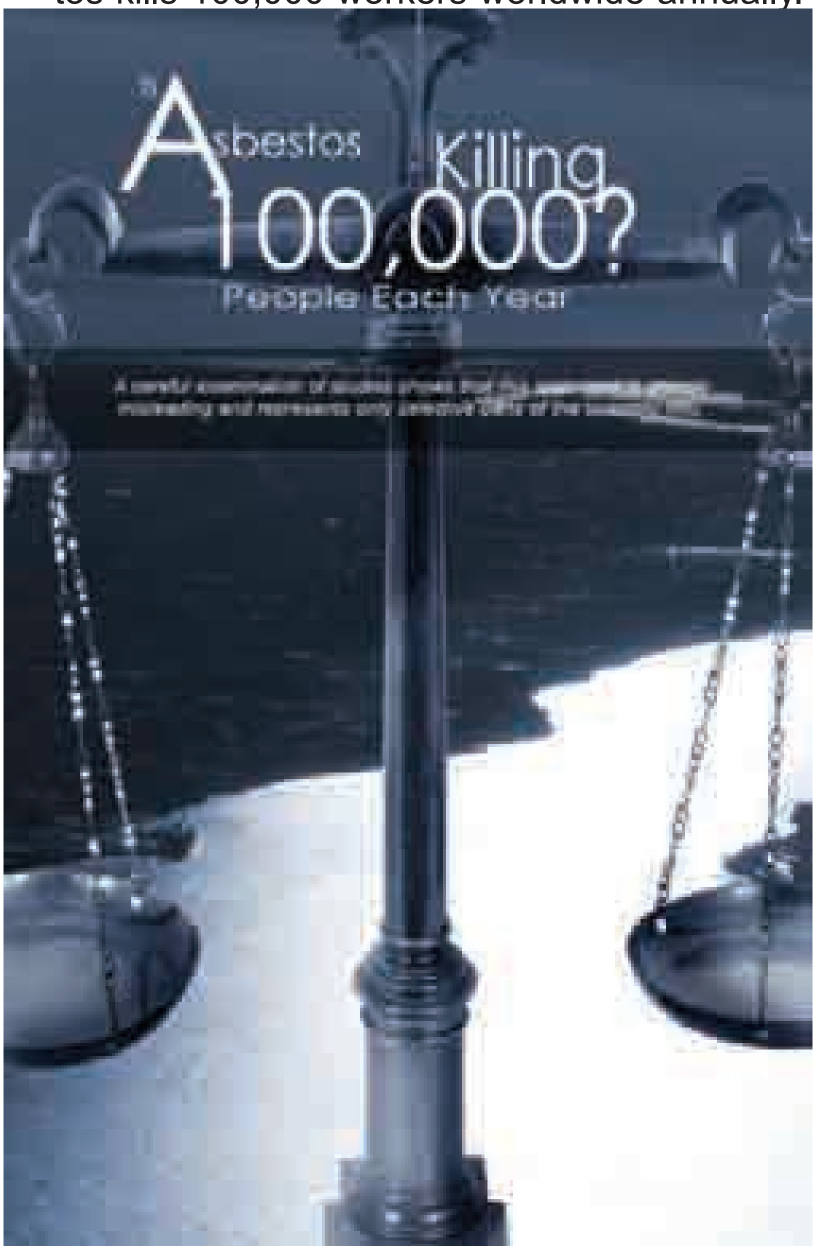
By banning a product instead of regulating its use, agencies are sending an inappropriate message that can lead to dramatic reverse effects. First, it implicitly sends the signal that unregulated, or lightly regulated products, can be used without proper precaution. Second, it prepares the ground for overreacting, such as the systematic removal where risk is nonexistent. Third, the outlandish cost of such an approach has to be considered. The case of the shameless wasting of financial resources in the United Kingdom over the removal of chrysotile-cement products is striking: it was estimated that implementing this regulation would cost around 8 billion pounds.

In the United States, from the 1950’s to the end of the 1970’s, millions of workers were exposed to various types of asbestos fibres on the job. In the vast majority of cases, these workers are not necessarily candidates for health problems from their occupational exposure to airborne fibres. Unfortunately, it is not the case for those who suffered high exposures to amphiboles. From the first wave of known injuries, a tide of asbestos personal injury litigations followed, reaching the courts in the 1970s. The pace of these lawsuits picked up greatly during the 1980s and 1990s. Today, there are more than 200,000 asbestos claims pending and 100,000 new claims filed in 2003, choking state and federal courts. Who is filing the majority of these claims? According to a recent estimate, people who have no physical impairment account for about 90% of annual claims.

More than 8,000 companies have been dragged into this litigation, from the Fortune 100 (the largest companies in the United States) to small, family owned businesses. For thirty years these companies have been paying an asbestos tort tax, expending an estimated $70 billion. Nearly 60% of that money went to the asbestos trial bar, defence lawyers and court costs. Companies are going bankrupt, American workers are losing jobs, a handful of personal injury lawyers are running away with billions of dollars - while the truly sick are not always getting compensated fairly and efficiently - often times getting pennies on the dollar for their injury. There are clearly vast personal interests involved that are not related to health issues and not much to do with plaintiffs' rights. In reality it is a big mess.

The Use of Misleading Science: The 100 000 Annual Death Myth

The press regularly publishes a title that is as alarming as provocative: "Asbestos kills 100,000 workers worldwide annually." This statement is constantly used by promoters of a total ban of asbestos. How can this statement be true, knowing that today's exposures are minimal and do not show any demonstrable risk when chrysotile is used properly?



Knowing the fundamental differences between the several asbestos fibre types, stating that "Asbestos kills 100,000 workers every year" is not only unscientific; it is a gross exaggeration and unfair. What would be the basis to affirm that "chemical kills x workers" or "metals are responsible for the death of x workers"? Nonsense. Chemical and metals include a wide variety of products with different properties, uses and health risk. It is the same with asbestos. There is no justification to put in the same basket the health risk of being exposed to all types of asbestos fibres. There is no reason to accept such dangerous extrapolation.

In the review of many scientific studies about workers exposed to various types of asbestos, Hodgson and Darnton (2000) estimated that the risk for lung cancer from working with amphiboles is 100 times what it is for chrysotile. In fact, the 100,000 death estimate is established from a "combined relative risk" for asbestos, therefore attributing a mortality ratio from exposure to amphiboles to workers working with chrysotile. It is as logical as saying that a mix of water and poison would kill people; half of them from ingesting the poison, the other half from water!

Moreover, the 100,000 deaths estimate is a pure and simple extrapolation. It does not take into account the fact that exposure levels have dramatically decreased in the last decades and that the use of chrysotile in the world has radically changed in the past years.

So, if exposure to chrysotile does not present a significant health risk, and if low exposure levels do not present an excess of lung cancer, where does the 100,000 annual deaths figure come from?

The latest Policy Paper circulated by WHO activists, at the end of 2007 makes no reference to the fact that not only are exposure levels 100 times lower than they were previously in peak asbestos usage. It makes no reference to the fact that the dangerous forms of asbestos fibres have been eliminated from today's products and that safe work practices and modern technology are in place today.

Estimates should therefore be corrected and the formula adjusted for this and all parameters re-calculated. In fact, 90% of the asbestos exposure yields no measurable future deaths (exposure to chrysotile), with only 10% of asbestos exposure (the amphibole fibres with their half life of up to 1,000 days) contributing to the future risk of lung cancer.

Those who affirm that "asbestos will kill 100,000 people each year" have a moral obligation to revise their predictions on future deaths. Whilst projections remain so heavily inflated, it allows some individuals and media, to convert concern over this fictional epidemic into capital. Hysteria sells!

SCHOOLS AND OFFICE BUILDINGS AS SEEN BY THE EPA

In the 1980’s, the U.S. EPA established a model for asbestos related diseases in relation with the number of workers exposed. This model gave dramatic numbers, leading to a series of measures that were not related to the nature of the problem. The U.S. Congress passed the Asbestos Hazard Emergency Response Act (AHERA) in 1986. It ordered school districts to locate all asbestos in their buildings and create a plan to manage it. It also imposed tight regulations on asbestos removal, raising costs and ensuring that the image of asbestos removal workers in spacesuits would keep fears high.

AHERA requirements have cost an estimated $50 billion over the past 20 years. It was found that the absence of excess lung cancers among residents of chrysotile mining towns implies a risk at least 15 times smaller than that predicted with the EPA model, and the number of mesotheliomas observed is at least 20 times smaller than that predicted by the EPA model. In 1990, the EPA issued the Green Book, which said asbestos in schools and offices presented a low risk. It also noted that improper asbestos removal could increase exposure by stirring up dust unnecessarily.

However, the EPA has never sustained an effort to reverse the multibillion-dollar asbestos removal effort that its early pronouncements sparked.

The experts refuse to face the fear created by the alleged health tragedy that befell asbestos workers – real and projected numbers – and the multibillion-dollar lawsuits that followed have overwhelmed the scientific evidence.

The Anti-Asbestos Lobby: Looking Out for Your Health or Their Wealth!

Still today and this, in spite of studies proving that it can be used safely, some people still preach for the ban of chrysotile. They say, to who wants to hear it, that chrysotile kills thousands of people, that there is no safe exposure level and that safer substitutes are available. They however conveniently forget to tell the history behind their headline, that is to say the story where it is explained that chrysotile was often mixed with amphiboles - large fibres responsible for cancer and mesothelioma - or was used, in the past, in a negligent manner exposing the workers to clouds of dust.

Refusing Science, Maintaining the Fear

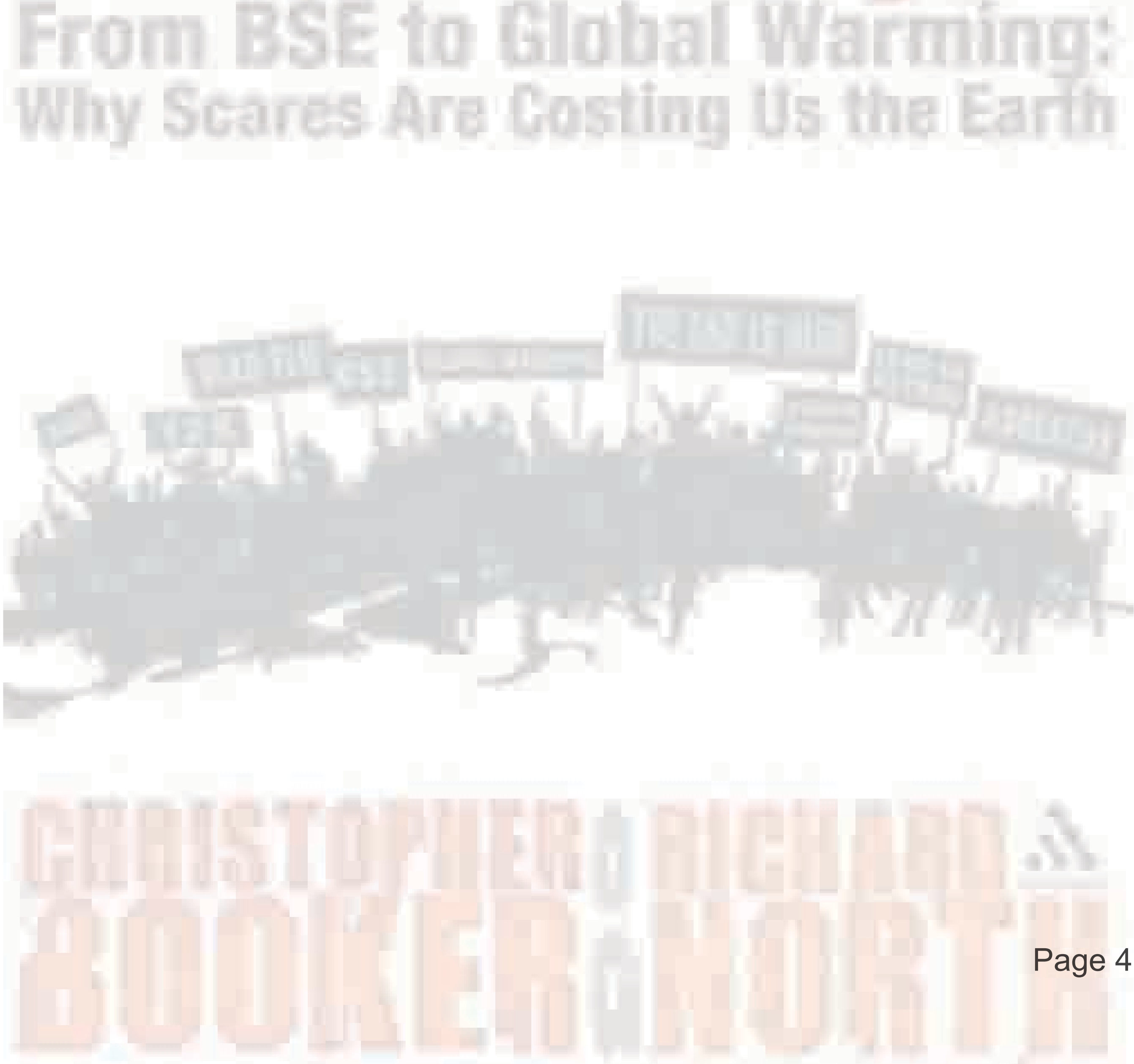
The global ban asbestos movement is implicitly supporting the industries that produce alternative fibres and products. They are not without knowing that substitutes to chrysotile, too often have not been scientifically proven as less harmful or safer than chrysotile fibres are. This must be of great concern to all.

No one should forget that the smear campaign against chrysotile is very profitable for some. In addition by encouraging manufacturers of substitutes, it is implicitly a support to the lucrative asbestos removal industry. Not to mention that some of the alternatives for chrysotile, such as ductile iron and PVC pipes so heavily promoted are also classified as human carcinogens.

These activities are not always dedicated to the laudable objectives of improving the health and safety and living conditions of people.

BAD THREESOME

In a remarkable book published in 2007 (Scared to Death: From BSE to Global Warming: Why Scares are Costing Us the Earth), British writers Christopher Booker and Richard North demonstrate links between three groups that seem at first sight to have nothing in common: the lucrative plaintiff lawyers in the United States; the contractors who lobby in the United Kingdom for a legislation to force the useless and expensive removal of asbestos material in houses; and, the International Ban Asbestos Secretariat organization.



Chrysotile: An Essential Commodity

IN A FEW WORDS

- Chrysotile cement products are still most cost effective for water supply, sewage, irrigation and drainage systems, housing for urban and rural areas in developing countries;

- It is estimated that more than 90% of the chrysotile used today is intended for chrysotile cement products;

- Compared to products coming from the petrochemical or metallurgical industry, chrysotile-cement products consume much less energy. In fact, the largest proportion of energy consumption goes into the production of cement;

- The resistance of chrysotile-cement products to corrosion, to ultra-violet rays and, notably, to rot is remarkable and unique;

- Chrysotile-cement products are by definition resistant to heat and fire. In fact, they may actually prevent or minimize the spread of conflagration;

- Chrysotile-cement waste disposal is inexpensive, simple and recognized practices are well known. They are made of naturally occurring material which returns to the environment after use.

Chrysotile Products in the Emerging World

In a world of unprecedented wealth, almost 2 million children die each year for want of clean water and adequate sanitation. Millions of women and young girls are forced to spend hours collecting and carrying water, restricting their opportunities and their choices. And water-borne infectious diseases are holding back poverty reduction and economic growth in some of the world's poorest countries.

Beyond the household, competition for water as a productive resource is increasing. Symptoms of that competition include the collapse of water-based ecological systems, declining river flows and large-scale groundwater depletion. Conflicts over water are increasing within countries, with the rural poor losing out. The potential for tensions between countries is also growing, though there are large potential human development gains from increased cooperation.

The Human Development Report continues to frame debates on some of the most pressing challenges facing humanity. Human Development Report 2006:

Investigates the underlying causes and consequences of a crisis that leaves 1.2 billion people without access to safe water and 2.6 billion without access to sanitation;

Argues for a concerted drive to achieve water and sanitation for all through national strategies and a global plan of action;

Examines the social and economic forces that are driving water shortages and marginalizing the poor in agriculture;

Looks at the scope for international cooperation to resolve cross-border tensions in water management.

In fact, chrysotile containing products present undeniable advantages, whose principal ones are as follows:

Low cost of raw material;

Technology known for several years;

Small consumption of energy;

Minimum environmental impact: manufacturers working in a closed circuit system, with no residues. These systems do not release residues containing chrysotile asbestos to the environment and they follow the strict parameters that make them “ecologically” or “environmentally correct” plants;

Low cost to the final consumer: Traditional roof shingles and water tanks made of fibre cement with chrysotile are extremely important to the emerging and poorest countries. Since this material is relatively inexpensive, the low-income population, which usually lacks housing and basic sanitation, can more easily afford it. This is a real opportunity for people to improve their living conditions.

Durability: because chrysotile-cement does not rot or absorb moisture, it is by far more durable than any other product or fibrocement. It has been estimated that the durability of most replacement materials is less than half the life expectancy of chrysotile-cement.

If the chrysotile cement pipes and roofing materials were banned in the emerging countries, it is obvious that their manufacturers will not benefit from the advantages of the low prices allowed by high volume production which comes with the access to the world market. Their products will have therefore to be sold at a higher price. This could result in the elimination of hundreds of thousands jobs! This will not help the people in poor countries. The impact will be very bad.

The question is to know which product is most likely to make it possible to reduce the serious problems from which the world populations suffer.

The facts are disconcerting and merit serious consideration:

More people, especially children, die due to drinking poor quality water than of AIDS and malaria put together;

Every year about 2 million children die from diseases in the absence of pure water;

Diarrhoea in Southeast Asia and Africa is responsible for as much as 8.5% and 7.7 % of all deaths respectively. This is mainly due to poor water quality;

Millions of people across the world have no permanent roofing. In some developing countries the number of temporary roofs (grass, bamboo, and thatch) make up to 30% of a country’s overall roofs.

Why Chrysotile-Cement Products Should be Used!

Chrysotile Cement is Produced by Low Energy-Consuming Technology

Manufacture of some products involves high energy consumption, which means a drain on finite resources (hydroelectricity, fossil fuels, etc.), some of which are non-renewable. Compared to products coming from the petrochemical or metallurgical industries, chrysotile-cement products consume much less energy; in fact, the largest proportion of energy consumption goes into the production of cement.

Chrysotile Cement has a Long Useful Service Life

Short product life means you have to replace more often, create more waste, and need more energy consumption, etc. The resistance of chrysotile-cement products to corrosion, to ultra-violet rays and, notably, to rot is remarkable and unique. A chrysotile-cement roof can last more than 50 years, while those containing replacement fibres, according to some observations, will rarely exceed 20 years. In fact, few other products have such a guaranteed long service life.

Chrysotile Cement Presents a Relatively Low Risk during its Manufacture

Use of countless products may cause environmental damage to fauna, flora, rivers, lakes, seas, underground waters. This may occur, following explosions, radioactive leakage, acid precipitations, etc., as a result of systems malfunction, equipment failure, human error, carelessness or other unforeseen reasons. With well-controlled plant operations, chrysotile-cement manufacturing presents a lesser risk to the environment, compared to many other product manufacturing technologies based on synthetic chemistry or metallurgy.

Chrysotile Cement Presents a Relatively Low Risk when in Use

Some products may be consumed by fire, releasing large clouds of toxic and/or corrosive gases. Whereas many combustible construction materials may, when they burn, release clouds of gases and/or fumes highly toxic to man and to the environment. Chrysotile-cement products are by definition resistant to heat and fire; in fact, they may actually prevent or minimize the spread of conflagration.

These are properties that are crucial to many everyday industrial, commercial, economic and individual activities. Discarding chrysotile asbestos would certainly not mean that the tasks requiring these properties would disappear. It would therefore be necessary to turn to replacement products, which are basically mineral or synthetic, fibre-based (glass, rock, slag, ceramic, carbon, plastic). These products are widely used as thermal insulation and, to a lesser extent, as friction material. Chrysotile cement is often replaced by building materials such as sheet metal or PVC (polyvinyl chloride). As a mechanical reinforcing agent, chrysotile is also replaced by other materials such as cellulose fibre.

It should be added that metal replacement products for chrysotile-cement in the building industry are more expensive, not only in economic terms but also in ecological terms when the full life cycle of these products is taken into account. Thus, for the same lifespan, the manufacturing or replacement metal products requires up to five times more energy than chrysotile-cement, with all which that entails in terms of air pollution and the waste of non-renewable resources.

It is worth repeating a few words about the exceptional characteristics of chrysotile that are not found in other products. Its usefulness lies in its physical chemical properties: chemically it is relatively inert and inflammable and it makes a poor thermal or electric conductor. It also serves very well as reinforcement against mechanical compression and traction stresses.

Chrysotile Cement Presents a Relatively Low Risk when Stored or Transported, Prior to or after Use

Transportation and storage of some raw materials or finished products prior to their use, or when discarded after use (ex.: corrosive liquids, hazardous chemicals, storage of discarded PCBs, spent lead batteries, old tires, etc.) may pose a hazard to both the environment and the general population. Transportation and handling of chrysotile-cement products do require appropriate care, but efficient and recognized work practices are simple and straightforward. The safe transportation and storage of some other products are far more complex, and mishaps can (and do) occur. The risk of environmental damage by a spill of a tanker full of crude oil or other petrochemicals, to the risk of a cargo of chrysotile-cement products is not comparable.

Chrysotile Cement Constitutes a Relatively Low Risk at Final Disposal Site

Some products present a high degree of hazard to the environment (soil and/or water contamination) if not securely contained in specially designed and tightly supervised disposal sites. Safe disposal of many modern products and waste has become an environmental and economic nightmare, often requiring especially designed and costly disposal sites, which must be monitored constantly to prevent leakage of contaminating substances into the environment and soil. Waste management is often so complex and costly that “easier” inappropriate solutions are often used... Chrysotile-cement waste disposal is inexpensive, simple and recognized practices are well-known. They are made of naturally occurring material which returns to its environment after use.

Trade Union Positions on Chrysotile

IN A FEW WORDS

- Trade unions from various countries around the world generally agree with the principle that health and safety regulations must be carefully observed by all manufacturers no matter what fibres are used. The protection of all, workers and the general population, should be based on reliable safety instructions and programs. This approach must be applied both to chrysotile materials and substitute products.

  Contrary to trade unions involved in chrysotile, this judicious and responsible approach is not shared by some European trade unions who are leading the charge and are opposed to the safe use of chrysotile – they want a total ban. Their philosophy is certainly not based only on health and safety concerns. They have other concerns and interests. Obviously they implicitly support the substitute industry they are representing.

The Safe and Responsible Use of Chrysotile

It is indeed possible to safely work with chrysotile as it is for uranium, nickel, coal and many other natural resources, commodities and other risky products.

Over the years, chrysotile miners, millers and manufacturers have implemented the controlled-use (International Labour Organization Convention 162 is an example) of this fibre. Their working environment is controlled and under surveillance. The workers and their labour organizations are deeply involved in the safe-use programme.

Ensuring a safe working environment for their members, they requested that the chrysotile industry provide itself with a "stewardship programme" with continuous analyses, inspections and medical surveillances. The requirements are rigorous – dare to ask any employees, employers or trade unions – and so are the control measures.

For many years now, chrysotile industry in cooperation, with their employees and labour organizations, worked quite hard to adapt their work environment to better protect worker's health and safety. It has given priority to improved work practices aimed to prevent accidents at work and occupational diseases and implemented prevention programmes to address the root causes of work hazards… and all of these backed by recent scientific data.

Today workers know that many of the replacement fibres and products are hazardous to health and the environment. Moreover, the use of these products is too often exempt from the rigorous standards governing the use of chrysotile today.

Workers also know that the replacement of chrysotile cement pipes with PVC pipes in water supply systems involves health and environmental hazards that are too rarely taken into account, and have also noted the absence of strict regulations in place for these products, especially in developing countries. For instance, PVC, which also contains lead as a stabilizer, is produced from vinyl chloride, a powerful carcinogen that may seep into the drinking water. Furthermore, the proper installation of PVC sometimes requires the use of some toxic and polluting substances, which is not the case for chrysotile cement products.

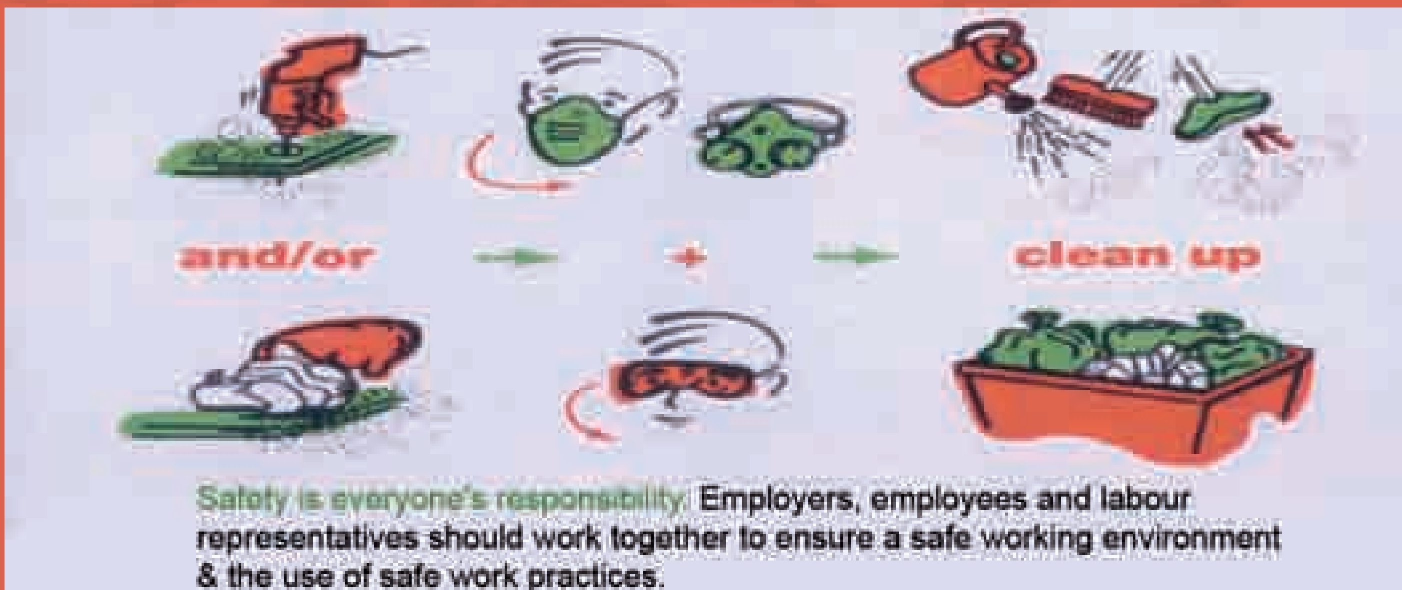
The workers involved in the chrysotile industry believe that the health and safety of workers and the public must be protected at all times. This is true for chrysotile asbestos and it must also become a reality for replacement products. The chrysotile labour movement demands that chrysotile replacement products in non-friable, high-density products be subject to the same regulatory standards as chrysotile.

Chrysotile asbestos can now be mined and processed under conditions that are not proven hazardous for workers. The same is true for high-density and non-friable chrysotile products, which do not involve hazards to the public or the environment. But workers and their unions are very well aware that the same cannot be said of the replacement products: little is known about them, and their use could prove to be costly, without any health or environmental benefits in return. This is why the chrysotile labour movement, except for some European labour unions, is opposed to a total ban of chrysotile asbestos.

The labour movement in the chrysotile industry decided many years ago, to play an active role in the responsible-use of chrysotile asbestos and they must be commended for this. In countries that have been producing and / or using chrysotile for decades, the workers have learned to mine and handle chrysotile safely. They are ready, and it is also their desire, to share their experience with their comrades in other countries.

It is in the best interest of all to discuss the ways workers are doing their jobs and the precautions they take in order to ensure – everywhere – the protection of occupational health and safety and the environment to which the people of the world are entitled.

Working Safer with Substitute Fibres and Products



Controls recommend by responsible employers should be precisely the same that allow all workers to use high-density chrysotile products in order to ensure a safe workplace.


440

Health Comes First

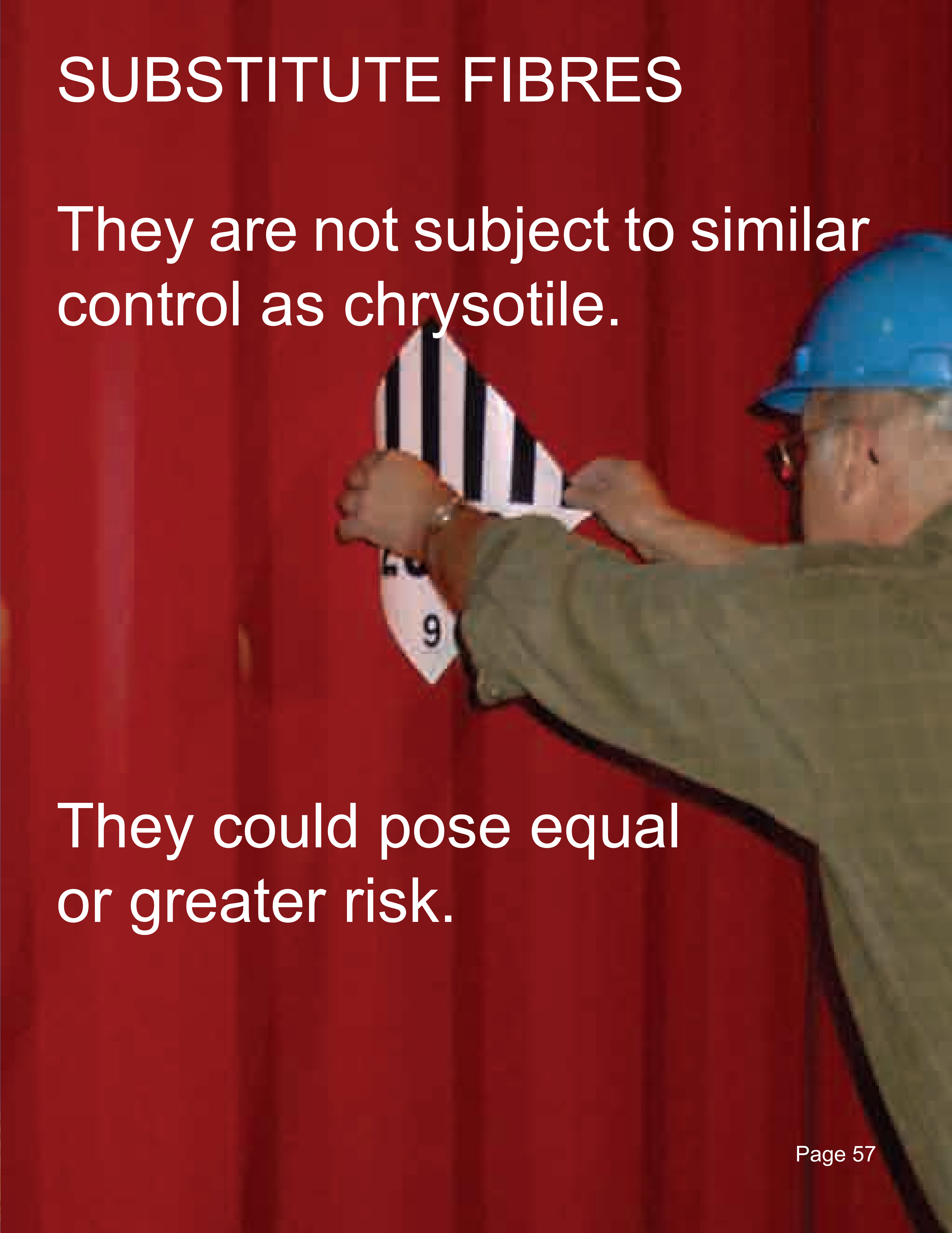
The trade union world related to chrysotile is conscious of particular working conditions that are actually encountered. In the construction industry, it is in this industrial sector that are found the greatest number and most severe health problems. Regularly exposed to a multitude of different fibre types, these workers are now living with the heritage from the bad management of asbestos amphibole fibres.

In certain parts of the world, in Europe and North America in particular, buildings erected and infrastructures built in the 80s and before, contain all types of asbestos fibres. When dismantling a part or the whole structure, workers are at risk of an exposure to high level of dust and amphiboles. Such risky situations must be addressed with determination by all concerned authorities.

Trade unions and workers of the chrysotile industry, who possess a solid expertise in this area, rightly demand that all precautions should be taken when working where asbestos amphibole fibres might be released. Safe working methods must be used, accompanied by a responsible-use approach, supported by a strict and well-articulated regulation, particularly in the construction industry, in which workers and their labour union must be involved.

Thus regarding dismantling, renovating in the building construction industry, trade unions from countries producing and consuming chrysotile want to make sure that all necessary measures are in place in order to protect the health of the workers which comes first.

SUBSTITUTE FIBRES



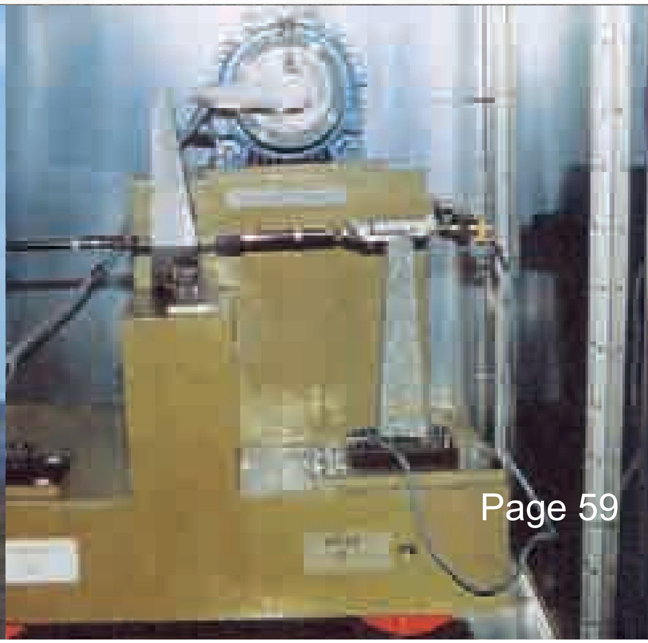
They are not subject to similar control as chrysotile.

They could pose equal or greater risk.


THE INTERNATIONAL
SCIENTIFIC-PRACTICAL CONFERENCE
"TRADE UNIONS FOR CHRYSOTILE"
April 22-24, 2008 Kiev, Ukraine

Difference of aspects between traditional paving and chrysotile-containing paving, after 12 years of use. RN 141, France.

Différence d'aspect entre un enrobé traditionnel et un enrobé contenant de l'amiante après 12 ans de service – RN 141, France.



LEARNING THE DIFFERENCE

The word asbestos is a commercial term to indicate any fibrous silicate mineral with a silicate fibrous form. There are many types of asbestos fibres, divided into two families: the serpentine (chrysotile) and the amphiboles (all amphibole mines, located mainly in South Africa and Australia, were closed in the late 20th century).

The two types of asbestos (serpentine and amphiboles) should never be included in the same category.