ASBESTOS AMPHIBOLES MUST BE **BANNED**

CHRYSOTILE MUST BE **CONTROLLED**

AUTUMN 2017

SCIENCE MUST PREVAIL

ICA
International Chrysotile Association

For environmental occupational health safe and responsible use

LOGO FSC

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FOREWORD

The Canadian Government's new Proposed Asbestos Regulations

On December 15, 2016, the Canadian government announced its pan governmental approach to asbestos management in Canada. In conformity with the Canadian Environmental Protection act (1999), it would ban all new activities related to asbestos and asbestos-containing products. That would include the fabrication, use, sale, sale offer, importation and exportation of asbestos.

Since the beginning of the 80s, successive Canadian governments have defended and wholeheartedly supported the safe use of all minerals and metals, including of course the use and production of the mineral fibre called chrysotile. Through the Chrysotile Institute, a tripartite organization (governments, unions, industry), the federal and Quebec governments invested more than C$55 millions to ensure the promotion and defense of the program for the safe, controlled and responsible use of chrysotile, with remarkable success.

For years, we can proudly bear witness to the exemplary collective will, actions and efforts that went into developing ways to safely use this natural fibre, here and around the world. Of course, as any other mineral or metal extracted and used here in Canada, it carries a certain level of risk for human health.

ICA therefore wish to intervene and present a certain number of important issues, with the hope of prompting the responsible competent authorities to conduct a rigorous analysis of this file before achieving a decision.

To reserve similar treatment to all types of asbestos fibres simply has no credible basis. Current scientific research clearly establishes that there are significant differences between various amphiboles fibres and chrysotile, whether one considers their chemical properties or their true risk level for human health. These differences are recognized in the ILO Convention 162 titled "Safety in the Use of Asbestos", which was published in 1986. It calls for an end to the use of certain asbestos amphiboles fiber type and for a safe and controlled use of chrysotile serpentine.

International Chrysotile Association

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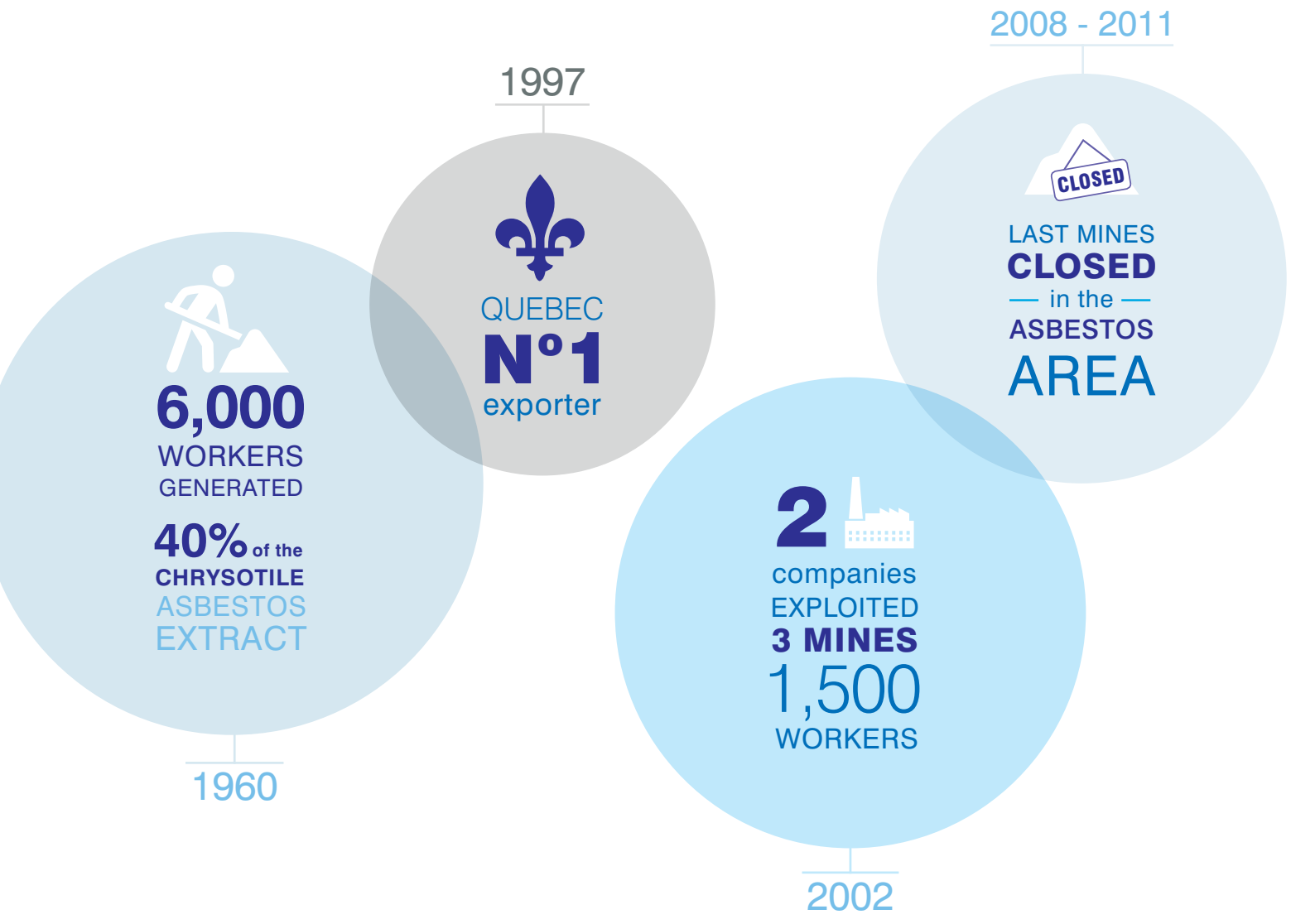
QUEBEC AND CHRYSOTILE

At the end of the sixties, 17 mines and some 6,000 workers, mostly concentrated in the "serpentine belt" (South of Quebec), generated close to 40% of the **chrysotile** asbestos extracted worldwide.

In 1997, Quebec was the world's second largest producer with 22% of overall production, and the #1 exporter with a share of more than 50% of worldwide exports.

In 2002, there were only two companies left that exploited three mines with some 1,500 workers that produced exclusively **chrysotile** asbestos.

Between 2008 and 2011, Quebec-Canada's last mines (Bell and Lac d'amiante, Quebec, in the Thetford Mines area and Jeffrey Mine in the Asbestos area) closed for good; the **economic impacts** for the concerned regions where **huge**, and persist to this day.



A DUBIOUSLY INSPIRED APPROACH

In December 2016, the Canadian government announced its political intention to follow through on the Liberal Party's election possibilities to ban asbestos, including chrysotile, as well as all asbestos containing products, by 2018.

It unveiled its **asbestos management strategy** in Canada, which namely includes **new regulation** that would ban:

- the importation, use, sale and sale offering of asbestos as well as the fabrication, use, sale, sale offering and importation of asbestos-containing products;
- the exportation of all type of asbestos and asbestos-containing products.

In April 2017, it initiated a process which will lead to :

- the publication of a **draft regulation** in **December 2017**;
- the adoption of a **definitive regulation** in **December 2018**.

The document titled *Consultation on the proposed regulatory approach to prohibit asbestos* and products containing asbestos was produced by Environment and Climate change Canada and Health Canada.

The government's approach has a laudable objective, that of protecting collectivities and individuals and allowing them to live a **safe** and **healthy** life.

The asbestos industry can only agree with this laudable objective and nobody is calling for a return to the past.

HOWEVER, IT IS VERY IMPORTANT TO BEAR IN MIND THAT THE GOVERNMENT EXPRESSED AND OFTEN REAFFIRMED ITS COMMITMENT **TO BASE THE DECISION** TO BAN ALL TYPE OF ASBESTOS MINERAL FIBERS (INCLUDING CHRYSOTILE) **ON SCIENCE**.

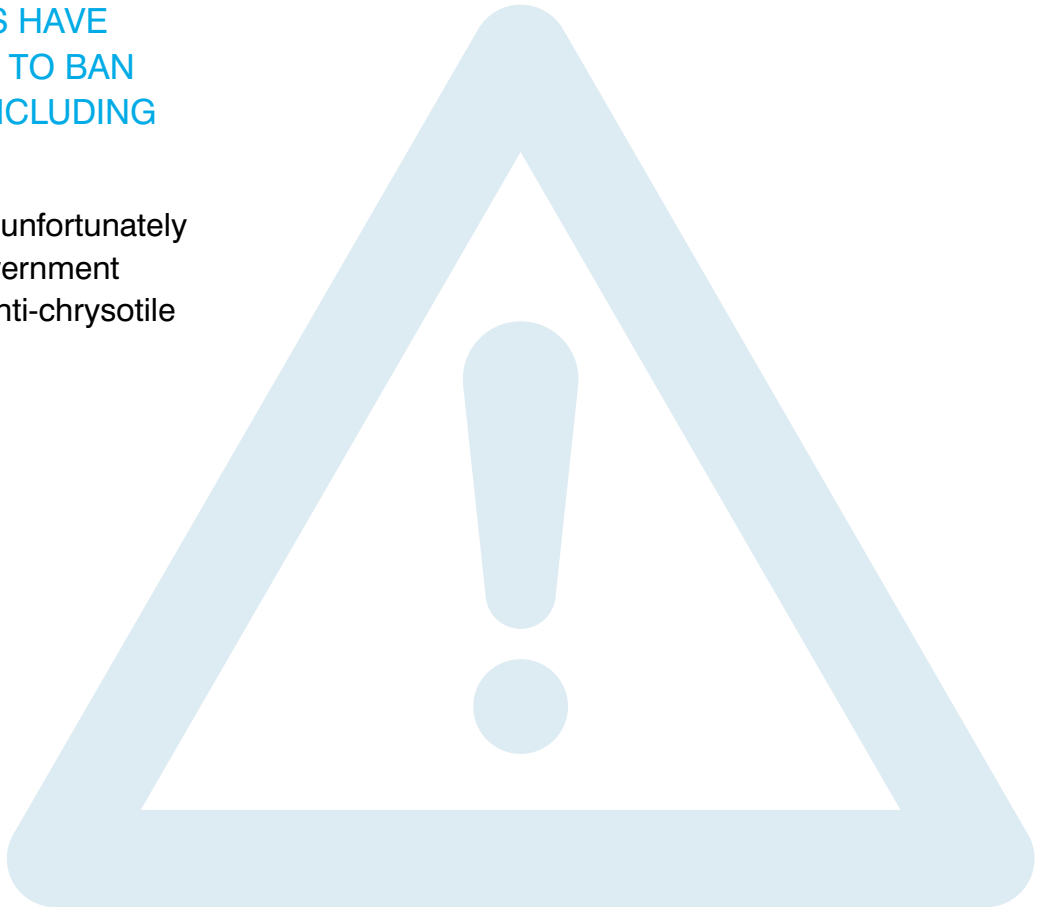
A DUBIOUSLY INSPIRED APPROACH (Cont'd)

This means that the upcoming regulation should be based on existing data, and not on:

- the dogmatism of anti-chrysotile protagonists;
- a negative, ill-founded perception that is systematically nurtured;
- political considerations.

FOR DECADES AND NOTWITHSTANDING THE REALITY OF THE ONGOING, **SAFE AND CONTROLLED USE OF CHRYSOTILE FIBRES**, RADICAL AND DOCTRINARY ACTIVISTS HAVE BEEN TRYING AT ALL COSTS TO BAN ALL TYPES OF ASBESTOS, INCLUDING CHRYSOTILE.

The current regulatory approach unfortunately gives the impression that the government seems inclined to embrace the anti-chrysotile activists' cause.



A DEEP AND WORRYING CONFUSION

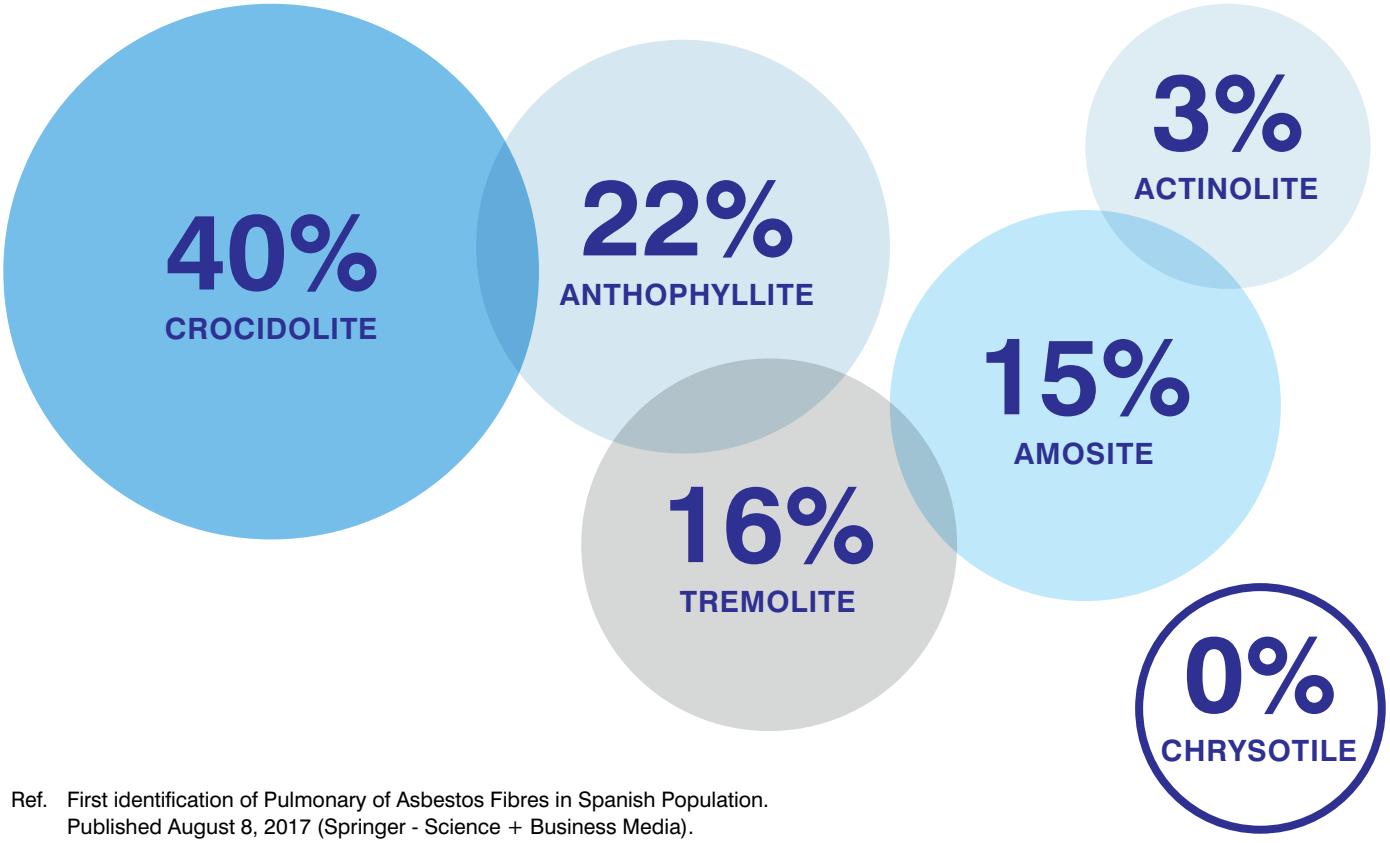
The proposed regulatory approach fails to draw the clear and unequivocal distinction established by scientists.

As a matter of fact, there is a **difference** in the **chemical structure** and **the true level of health risk** posed by the different groups of minerals called:

- **serpentines**, which comprise a single fibrous structure, called chrysotile (or white asbestos);
- **Amphiboles**, which comprise five (5) fibrous structures (anthophyllite, actinolite, tremolite, amosite or brown asbestos and crocidolite or blue asbestos).

TYPES OF ASBESTOS FIBERS FOUND IN THE DIFFERENT SAMPLES

Identification of pulmonary asbestos fibers of exposed and non-exposed populations and, types and dimensions of asbestos fibres found in different lung samples. Amphiboles fibres accounted for 100% of fibres recovered. No chrysotile fibres were found in the samples analysed.



Ref. First identification of Pulmonary of Asbestos Fibres in Spanish Population. Published August 8, 2017 (Springer - Science + Business Media).

A DEEP AND WORRYING CONFUSION (Cont'd)

The **confusion** is knowingly fostered by the **anti-asbestos lobby** and a **powerful litigation business**.

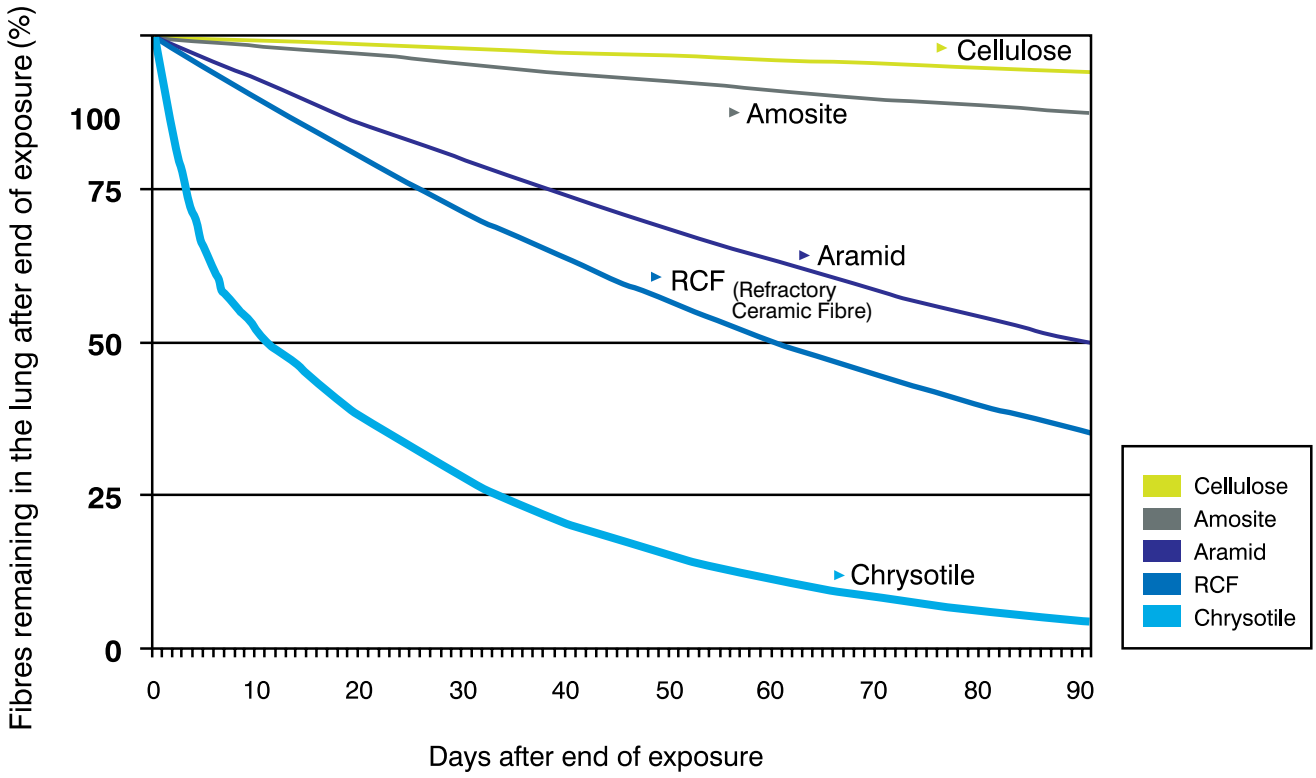
For those groups, health-related considerations are too often used as an efficient lever, even if they are presented as their fundamental objective.

Unlike amphiboles, **chrysotile doesn't stay very long in the lungs after inhalation and is quickly eliminated by the body.**

THIS IS CALLED BIOPERSISTENCE

Biopersistence is the lenght of time for inhaled particles to persist in the lungs and adversely affect surrounding tissues before they are eventually cleared. Of all the fibres analysed, chrysotile is the fibre which is the most quickly eliminated from the body.

BIOPERSISTENCE OF SEVERAL RESPIRABLE FIBRES



Ref. D. Bernstein & All Inalation Toxicology Biopersistence, 2005.

FACTS, AND FACTS ONLY

Except for chrysotile, all forms of asbestos are on the Rotterdam Convention's list of banned or severely restricted chemical products, which regulates the international trade of dangerous products.

At the recent Conference of Parties to the Rotterdam Convention (COP 8), numerous countries **refused to bow to the anti-asbestos lobby's pressure** and opposed the addition of chrysotile to that list.

The necessary consensus could not be reached and this situation has now been repeating itself for more than 15 years.

Consensus is impossible, and for good reason :

› **two thirds (2/3) of mankind use chrysotile** in their respective countries.

It is an affordable fiber that they badly need for which the efficiency is not questionable.

The world still uses asbestos

even though unhealthy crusades of past decades have been asking for a total ban of asbestos including chrysotile.

It is important to understand that numerous countries are using chrysotile fibers nowadays.

AMONG OTHERS

SOUTH ASIA
BRAZIL
CHINA
INDIA
INDONESIA
MEXICO
RUSSIA
USA
ETC.

FACTS, AND FACTS ONLY
(Cont'd)

The world is currently witnessing a **pitched battle** between **rich and poor countries**.

Rich countries aim at monopolizing very lucrative markets for their replacement products.

Health is too often a smokescreen behind which lie many other interests.

Many intervenors have underscored that the **scientific studies quoted** by some countries favourable to the banishment of chrysotile **are more than 15 years old** and that they have been **strongly disputed by the results of more recent studies**:

The most recently published scientific studies and most serious research have demonstrated that **chrysotile** – **the only type of fibre currently commercialized** – **is much safer than asbestos amphiboles**.

It is worth noting that countries like Australia, Japan and in the european group – that have used lots of amphibole fibres over the years – are pushing for a total ban of asbestos including chrysotile and have already banned it in their respective country. There are certainly many vested interests at stake.

WHAT THE SCIENCE SAYS

The rate of asbestos related diseases has started to decline. This is thanks to direct improvements in working conditions implemented from the 1970's and the prohibitions of amphiboles and usage practices (like spraying, friable products, etc.) in the late 1980's. Proper information, good work practices and appropriate control measures — not a blind prohibition — have achieved the objectives of the WHA sanctioned WHO program on need to adopt measures to eliminate and prevent asbestos-related diseases.

Many scientific studies published in the last 25 years have shown that the rates of industrial diseases of workers in the asbestos-cement industry — which accounts for more than 90% of the use of chrysotile in the world today — do not exceed the national average.[1]

The safe and controlled use of chrysotile is neither a myth nor a pipe dream. It is a well-known and well documented reality.

The products marketed are **without real health risks** because the **chrysotile fibre is encapsulated** in a cement or resin matrix.

Because it is **encapsulated**, the chrysotile fibre can't be airborne (**non airportable**) and therefore can't be breathed in (**non-respirable**).

TO BAN **CHRYSOTILE** WITHOUT ANY RESTRICTION AMOUNTS TO DENYING THE WIDELY RECOGNIZED AND ACCEPTED PRINCIPLE OF ITS **CONTROLLED AND SAFE USE**, A PRINCIPLE WHICH HAS TRADITIONALLY BEEN PROMOTED, DEFENDED AND APPLIED BY NUMEROUS COUNTRIES INCLUDING CANADA.

1. Health Risk of Chrysotile Revisited, D. Bernstein & All, Critical Review in Toxicology. Informa Healthcare, 2013.

FACTS, AND FACTS ONLY
(Cont'd)

To deliberately **confuse** chrysotile with amphiboles is an unhealthy and misleading strategy .

One must not be fooled by the activists' disinformation tactics that :

- **Knowingly confuse** and even scare individuals and communities;
- Attempt to justify a **radical and irrational position**, namely the absolute prohibition of all types of asbestos, including chrysotile.

This strategy **perpetuates a misleading and dangerous impression** according to which once chrysotile will be banned, people's health and security will be assured.

The very thought that a government could choose such an unclear and garbled path is **unacceptable and deplorable**.

THIS LINE OF THOUGHT AND ACTION COULD BECOME THE SOURCE OF COSTLY MISTAKES WITH REGARD TO THE EXPLOITATION OF OTHER NATURAL RESOURCES WHICH ALSO INVOLVE HEALTH RISKS. IT MAY BECOME A VERY EXPENSIVE MISTAKE FOR YEARS TO COME.

"In the current public health debate, we are especially worried by the fact that the ***confusion around fibrous minerals****, commonly called asbestos, continues to reinforce preconceived ideas. Obviously, many participants are* ***neither sufficiently competent nor expert enough*** *to differentiate the minerals in question.*

A number of studies have demonstrated that amphiboles remain in the body 10 times longer than chrysotile. Others establish that the quantity of chrysotile fibers must be several hundred times higher for them to induce a risk similar to that of certain amphiboles.

Notwithstanding the scientific proofs which differentiate their health impact, ***chrysotile and amphiboles are still being wrongly amalgamated*** *under the name of asbestos.*

We find particularly unfortunate that the Quebec National Public Health Institute (Institut national de santé publique du Québec) doesn't make such distinction.

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Professors, Department of Geology
And Geological
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Laval University

Asbestos and Chrysotile: Apples and Bananas!

Le Soleil, March 25, 2010

A QUESTIONABLE POLITICAL STEP AHEAD
FROM CANADIAN GOVERNMENT

DECEMBER 15, 2016

Unveiling of Canada's government-wide strategy for asbestos management

Publication of a **notice of intent** to develop a **regulation** concerning asbestos with the aim of prohibiting:

- The importation, use, sale and sale offering of asbestos as well as the fabrication, use sale and sale offering of asbestos-containing products;
- The exportation of all types of asbestos and asbestos-containing products.

Interested parties had until January 18, 2017 to forward their comments.

APRIL 2017

Publication of the consultation document elaborated by Environment and Climate change Canada (ECCC) and Health Canada (HC). **Interested parties had 45 days to comment.**

DECEMBER 2017

Publication of a proposed regulation. **Interested parties will have 75 days to provide comments.**

YEAR 2018

Publication of the final regulation.

Governments must make sure that the regulation won't allow **to do indirectly what elected representatives refuse to do directly.**

That is, **to prevent the valorization and certain forms of exploitation of mining residues** and therefore **Quebec region revitalization**.

The proposed regulations should never be a springboard for activists wanting to block the future of any economic activities related to mining residues.

A BIASED PROCESS

A bogus consultative process, expeditiously conducted.

› No more than a hundred days to comment on a **very complex** issue and to gather reactions from citizens of a country as large as Canada.

A process which has absolutely nothing to do with social acceptability.

› No real dialogue with the communities : comments were to be made online or sent through the mail.

A consultation document that is neither factual nor neutral.

› Deliberate confusion between two (2) completely different types of asbestos fibres.

› Biased and well selected references.

The document makes no distinction between chrysotile and amphiboles.

It intentionally only contains very limited and well oriented information. Lets remember that over the years numerous studies and research demonstrate that **chrysotile is significantly less dangerous and safer** than the other types of asbestos fibres, especially amphiboles.

Chrysotile should not be banned but controlled, because:

› **it is not the main factor causing malignant tumors** (mesothelioma) as stated by the anti-asbestos propaganda, amphiboles are;

› it doesn't represent an unacceptable risk level for human health when it is used in a **controlled and responsible manner**.

Current technology allows for a **very low exposition threshold** (1 fiber/cc or less) so that the true health risk level practically becomes **scientifically non-measurable** (what experts call the practical quantitation).

To our knowledge, there is no study or published scientific research that calls for the banishment of chrysotile.

› Neither the World Health Organization (WHO) nor the World Trade Organization (WTO) have formulated such demand.

› The Rotterdam Convention's Conference of Parties has never officially opted for the total and definitive elimination of chrysotile.

SAFE AND CONTROLLED USE

The latest scientific evidence published strongly supports the following views:

1. CHRYSOTILE IS SIGNIFICANTLY LESS HAZARDOUS THAN THE AMPHIBOLE FORMS OF ASBESTOS (E.G. CROCIDOLITE AND AMOSITE).

2. WHEN PROPERLY CONTROLLED AND USED, CHRYSOTILE IN ITS MODERN DAY HIGH-DENSITY NON-FRIABLE APPLICATIONS DOES NOT PRESENT RISKS OF ANY SIGNIFICANCE TO THE PUBLIC AND/OR WORKERS HEALTH.

3. CHRYSOTILE UNDER SAFE AND CONTROLLED USE IS NOT RESPONSIBLE FOR MESOTHELIOMA.

4. THE DIFFERENCIATION BETWEEN AMPHIBOLES VERSUS CHRYSOTILE LIES IN THE POLICY OF THE INTERNATIONAL AGENCIES (WHO, ILO) AND THE ROTTERDAM CONVENTION.

AN UNJUSTIFIED HURRY

Amphiboles are banned and nobody wants to take a step backward on this issue.

Chrysotile is the only type of commercialized asbestos and it is used in a controlled and safe manner.

We must repeat it ceaselessly, to confuse amphiboles and chrysotile amounts to:

- **unnecessarily misleading and scaring people and communities;**
- **attempting to win at all costs the activist crusade in favor of the complete banishment of all types of asbestos, including chrysotile.**

For example, the United States has decided to **further develop its scientific analyses** before making a final decision on regulation of chrysotile.

The issue will be studied for as long as necessary for the authorities to make a well-founded and appropriate decision on the future of this natural resource.

A RESPONSIBLE APPROACH FOR ALL NATURAL RESOURCES SHOULD BE BASED ON FACTS AND ACCURATE SCIENCE

AN EXAMPLE OF DISINFORMATION

Some people say that just one asbestos fibre is enough to trigger a mesothelioma cancer. It's totally false!

About 12 litres of air per minute transit through human lungs, the equivalent of 17,280 litres of air every day.

Ambient air naturally contains 0.001 asbestos fibre per millilitre, or one (1) fibre per litre, a concentration considered as being:

- **"acceptable"** by Canada;
- **"safe"** by France.

THEREFORE, UNLESS THE AIM IS TO DELIBERATELY MISLEAD THE POPULATION, IT IS IRRESPONSIBLE TO SERIOUSLY MAINTAIN THAT A SINGLE ASBESTOS FIBRE CAN KILL.

1. Royal Commision on Asbestos in Ontario, Canada 1984.
2. Académie Nationale de Médecine, France, April 1996.
3. Report by a study group of Royal Society, London UK, 1983.

A NECESSARY THOROUGHNESS

The anti-asbestos crusaders maintain that the inability to control risks associated to a product means that it should be **banned without any distinction**.

Chrysotile doesn't fall under that category, unlike amphiboles and friable products that are no longer on the market.

Today, only high density products are being commercialized.

Contemporary norms, technologies and work methods ensure their **controlled and safe use**.

Governments should always support and favor the responsible approach for all minerals and metals as well as for the whole natural resources.

FROM A SCIENTIFIC POINT OF VIEW, ATTEMPTING TO JUSTIFY A GOVERNMENT INTERVENTION THAT AIMS AT BANNING CHRYSOTILE IS HIGHLY PROBLEMATIC. THE MEASURE IS DEFINITELY TOO EXCESSIVE.

A SALUTARY REMINDER
(our translation)

"Without minimising the importance of public health issues related to the past exploitation of asbestos, the Fédération des chambres de commerce du Québec (FCCQ) considers that all factors must be taken into consideration and that current scientific knowledge clearly establish that, from a health and environmental standpoint, it is now widely recognized that encapsulated chrysotile asbestos can be exploited safely."

The Federal government must start listening to the regions' economic actors, who could suffer the consequences from its decision to ban asbestos in Canada (…). The transformation of asbestos-containing mining residues represents an economic development opportunity for regions looking to diversify their economy"

Asbestos ban – The Federal government must start listening to the regions which could suffer the consequences from its decision to ban asbestos in Canada.

Fédération des chambres de commerce du Québec – Press release, December 15, 2016.

fccq | Fédération des chambres de commerce du Québec

For many years, practices surrounding the use of products containing chrysotile asbestos have been greatly improved and today they can easily be used in a perfectly safe manner. The use of friable asbestos materials and of that type of fibres was abandoned more than 30 years ago. Products made with chrysotile are more combustion and corrosion-resistant, more durable and more economical, which makes them products of choice that should not be dismissed out of hand when designing government buildings.

As our governments' resources will be much in demand for infrastructure projects in the upcoming years, it is essential that public policies be developed on the basis of current scientific findings, and take into account modern prevention means. We ask the government not to bow to international pressures, in order to save a vital industry for the economic integrity of many of Quebec's regions.

Fédération des chambres de commerce du Québec

TO CONCLUDE

A country who bans the use of a product which has multiple uses must replace it by something else.

Yet, when it comes to fibres or chrysotile replacement products, many of them have never been subjected to the scientific analyses needed to establish their harmlessness, or the level of their potential health risk. **This is a matter for serious thought for all competent authorities.**

THE EMERGENCE OF SUBSTITUTES

Over the last few decades, non-asbestos fibrous material, both man-made and those extracted from natural deposits, have been proposed and are presently used as substitutes for chrysotile. A proper approach must be taken in order to scientifically evaluate that such products are safer and less harmful than chrysotile for human health.

Recently published results from cell, tissue and animal experimentation indicate that most fibrous materials of respirable size display some degree of biological activity. These results suggest that their widespread production and use should be governed by appropriate monitoring and control of dust exposure, especially for materials which are long and thin, and which display long “in vivo” durability (biopersistence).

Thus, the safety issues applied for the use of chrysotile should also apply to all fibrous marterials. This must also be a matter of real concerns for all competent authorities.

THE INCLUSION OF AN AGENT IN GROUP 1 OF THE IARC CLASSIFICATION IMPLIES THAT IT MUST BE BANNED

OBVIOUSLY NO!

The International Agency for Research on Cancer (IARC) classification is about **HAZARD, NOT RISK.**

Characterizing a hazardous substance is not equal to assessing the TRUE RISK. Hazard charactarerization is an essential but insufficient component of risk assessment. Exposure data over time and estimation of the likely risk - UNDER ACTUAL CONDITIONS OF USE - are essential. So IARC indentification does not refer to RISK ASSESSMENT.

So IARC classification is not meant and should not be used as instrument for eventual regulatory action.

If a government really wants to play a useful role in the area of health, **it should ban the use of amphiboles without delay**. In fact, the most recent scientific advances invite it to do so.

As per the serpentine chrysotile fibre, a **controlled and responsible approach** of its use is the most appropriate course of action.

That is the position adopted among others by Canada with regard to more than a hundred agents, mixtures or exposure circumstances which are included on the International Agency for Research on Cancer (IARC)'s List of Group 1 carcinogens.

One should never forget what has been published by IARC and/or WHO on alledged very high risk for human health with red meat, smoke meat, diesel emanation, air polution, silica, wood dust or tobacco.

Pertaining to the aforementioned items, no suggestion from any government to promote a total ban has ever been advanced. However the safe and controlled use, of appropriate information, and education are the proposed answer in order to reduce the health risk for humans in the use of risky products and substances.

- The IARC is an intergovernmental body that was created by the United Nations' World Health Organization (WHO).
- Among all those products that countries continue to use (i.e. in Canada), **why did any governments arbitrarily choose asbestos, including chrysotile?**

In a file as complex as asbestos, a true consultation, serious and rigorous, must not stray from science and must protect itself against any undue influence.

If our neighbours to the South have decided to take all the necessary time to reflect and conduct an in-depth analysis of this issue over the next few years, **why is Canada acting that way?**

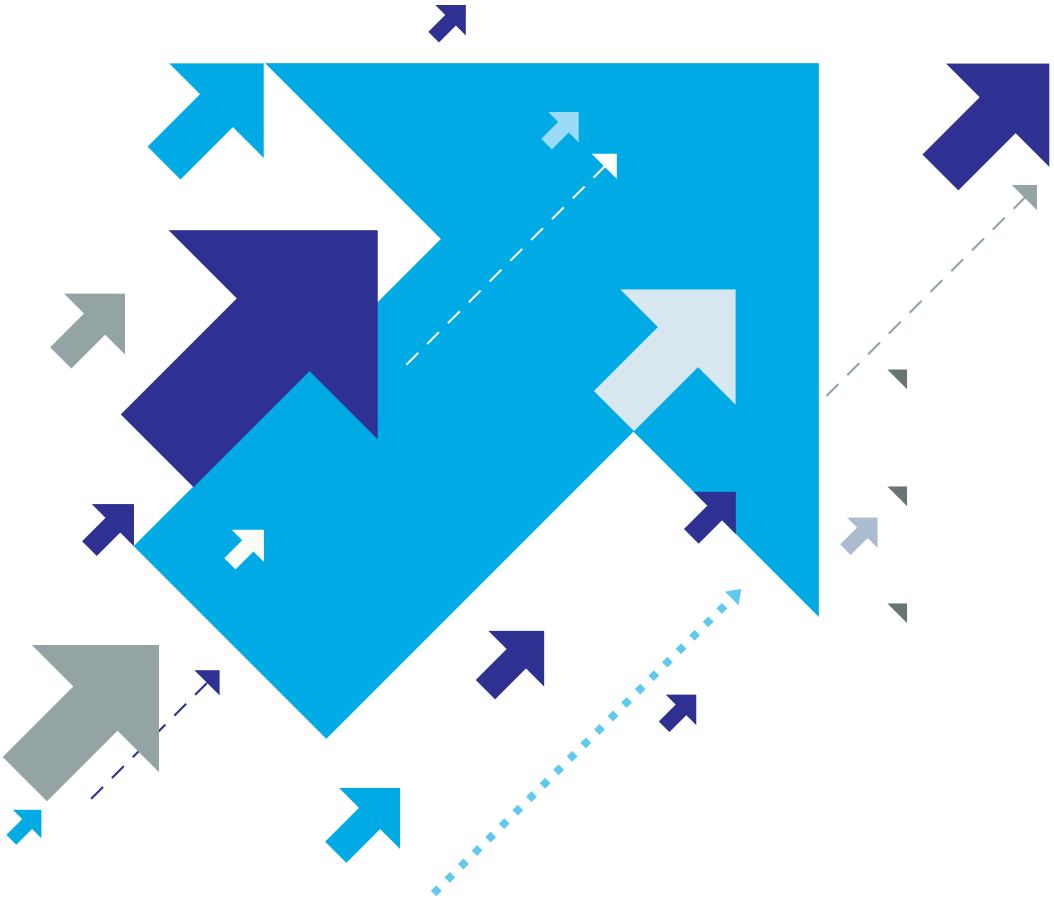
- **The government would be well advised** to move along the same path as that privileged by the United States in order **to gather all the necessary elements** to conduct an in-depth and thorough reflexion, and **then ultimately make the most informed decision.**
- **Banishment** is even less appropriate in view of the fact that Canada is about to arbitrarily and completely prohibit a **natural resource** that can be found everywhere on its territory. Canada can't ignore the fact that it has abundant natural resources which also carry health risks.

A RESPONSIBLE GOVERNMENT APPROACH MUST ABSOLUTELY INVOLVE THE CONCERNED COMMUNITIES IN ORDER TO MEASURE THE DEPTH AND THE IMPACT OF ITS GESTURE. **IT IS A DUTY IT CANNOT AVOID!**

OPTING FOR THE BANISHMENT OF A NATURAL RESOURCE IS AN EXCESSIVE, RADICAL, INEQUITABLE MEASURE, WHICH CARRIES MANY RISKS.

THE GOVERNMENT OF CANADA MUST NOT YIELD TO DOCTRINARY AND HIGHLY HARMFUL DEMANDS EMANATING FROM LOBBIES WHICH CAN'T AND WILL NEVER BE SATISFIED.

IT ABSOLUTELY MUST ENSURE THAT ITS FUTURE REGULATION IS BASED ON RIGOR, THAT IS, SCIENCE MUST BE ITS ONE AND ONLY GUIDE AND THE MOST RECENTLY PUBLISHED SCIENTIFIC STUDIES ITS TRUE FOUNDATIONS.



AFTERWORD

SCIENCE MUST PREVAIL

Many scientific studies have concluded that a number of replacement products are hazardous for human health and that in the case of many of them their dangerousness can't even be properly evaluated, for the lack of existing proper studies. To that end, one must understand that we cannot satisfy ourselves with ordinary media articles or declarations from banishment proponents: Canada must engage in a rigorous, science-based procedure that will review all aspects of the use of chrysotile fibre substitutes.

If one wants to protect people's health and fight asbestos-related diseases, as the WHO wishes, one must prioritize safe use and agree to do so while respecting the differentiation that must be done between the different types of fibres. The response doesn't lie in the product's banishment but in prohibiting inappropriate extraction methods and uses.

The principle of safe and controlled use is plain common sense, even if it is not the one preferred by anti-asbestos crusaders, whose demands are pushing in the opposite direction.

Canada has the privilege of being a country blessed with abundant natural resources which also come with a certain level of risk for human health. In agreeing to head towards banishing one of these resources, there is a very real risk that it will be the first step in a long adventure.

Where and when will it stop? No competent authority can be sure.

Eventually, there will be potentially far-reaching implications and it would be irresponsible not to immediately take them into full consideration, before it is too late.

International Chrysotile Association

For information and comments: info@chrysotileassociation.com

ICA
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For environmental occupational health safe and responsible use.