Quality That Lasts

Chrysotile cement is made by adding 10% to 15% chrysotile fibre to a mixture of Portland cement and water. It is a highly cost-effective material with high tensile strength and excellent compression resistance. The reinforcing properties of chrysotile fibre greatly increase the durability of cement building products and permit the manufacture of thinner and lighter products. Using chrysotile cement building materials makes sound economic sense: raw materials are easily available and stable in price; they are energy efficient, relatively inexpensive to manufacture and install; and most importantly they are dependable and durable.

From chrysotile slate tiles, to traditional Spanish-type roofing materials and extruded mouldings, modern chrysotile cement products offer an exciting range of options for designers, architects and material specifiers.

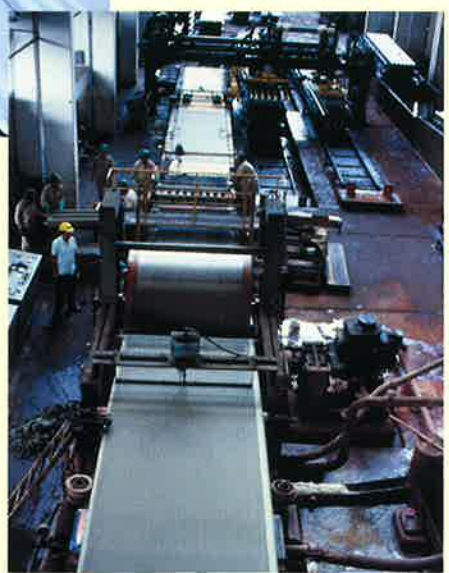
Superior durability

The principal competitive product of chrysotile cement corrugated building materials is metallic sheet, more specifically galvanized iron sheet. Metallic roofing, especially very thin galvanized iron sheet, is generally cost competitive on an installed basis, but suffers major economic shortcomings when compared to chrysotile cement on a total service life basis. Because these materials are highly vulnerable to corrosion, the average service life of metallic sheet is significantly lower than that of chrysotile cement. Not only is the maintenance of corrugated iron costly over time, it has inferior acoustic and thermal insulation properties.

While there are many other products currently used in residential and commercial construction and for water distribution and sewerage, none matches the combination of technical and economic benefits of chrysotile cement. Not only are chrysotile cement products comparatively inexpensive, they also have a proven service life, often more than 50 or 60 years.

The useful life of chrysotile cement roofing is about twice that of iron roofing, depending on the type of corrosion protection used.

Aside from its superior durability and performance, chrysotile cement requires comparatively little energy to manufacture[1]. In addition, the principal raw material, Portland cement, is available almost anywhere in the world. This means that manufacturers may only need to import chrysotile fibre, thus reducing foreign currency expenditures. More importantly, making the product domestically creates local jobs.



1. Report by the Batelle Institute Research Center, Geneva (1993)

Protecting Worker Health

Moving beyond the asbestos controversy

Uncontrolled work conditions, work with friable insulation materials and the extensive use of amphiboles (also referred to as blue and brown asbestos) in the past have resulted in asbestos-related disease. But times have changed: the types of fibres and products used are different, and dust control technology has evolved. Today amphiboles are no longer used, the use of low-density friable insulation materials has been banned, and exposure limits for chrysotile are hundreds of times lower than past worker exposures. We are now beginning to see the results of these tremendous improvements in workplace safety.

With the application of basic, well-established workplace and environmental controls, chrysotile cement products do not present risks of any significance to workers, the general public or the environment.

Safety in the manufacturing sector

Most chrysotile cement manufacturing is based on the Hatschek process. This is a wet process in which the fibre is added to a mixture of cement and water and then moulded, cured or hardened to form the finished product. Because it is a wet manufacturing process which prevents chrysotile from becoming airborne, the application of basic controls can ensure a safe work environment.

With current technology, dust levels can be kept well below internationally accepted exposure limit values. Recent surveys of Asbestos International Association (AIA) members in 35 countries have found that almost 90% of workers are exposed to levels lower than these international standards. At these levels of exposure, risks to workers, if any, are too low to be detected, and asbestos-related diseases will simply become a thing of the past.

Good dust control on the work site is easily achieved with basic work practices and simple, readily available tools.

Dust control on the work site

New product designs and installation techniques are helping to eliminate the need for on-site cutting and drilling, thus avoiding the primary source of dust. Where cutting or drilling is required, hand tools or low speed tools, in combination with wetting ensure that dust is kept to a minimum, well below current exposure standards. If high-speed cutting tools are used, they should be fitted with HEPA (High Efficiency Particulate Aerosol) vacuum filters. For the removal of chrysotile cement products, the application of work practices which do not generate dust protects worker health.

Chrysotile Cement and the Environment

Chrysotile asbestos is a naturally occurring mineral which has been present in the air and water around the world long before it was mined and used commercially. On average, humans inhale thousands and ingest millions of asbestos fibres each and every day without any detrimental effects. According to a Group of Experts' meeting convened by the International Programme on Chemical Safety (IPCS) in 1986, at low levels of concentration of airborne asbestos found in the general environment "the risks of mesothelioma and lung cancer attributable to asbestos cannot be quantified reliably and are probably undetectably low. The risk of asbestosis is virtually zero". [2]

Energy consumption in chrysotile cement production is also significantly lower than in other building materials such as galvanized iron sheet. When these and other considerations are taken into account, chrysotile cement products offer a clear environmental advantage over competitive building materials.

Studies have shown that the fibre levels in or around buildings with chrysotile cement roofing materials are no higher than naturally occurring background levels in neighborhoods without chrysotile cement roofing.

All solid or liquid by-products of chrysotile cement production, including packaging, can be recycled and reincorporated into the manufacturing process. Non-friable chrysotile cement waste is inert, which means that it can be disposed of in municipal or industrial land fills without risk of water or soil contamination.

Why Chrysotile-Cement is a Sound Environmental Choice

- low manufacturing energy consumption
- long useful service life
- made from simple raw materials
- low risk of spills or contamination during manufacture
- low risk of combustion and no toxic fumes
- ease of storage or transportation
- easy waste disposal

2. International Programme on Chemical Safety, Environmental Health Criteria 53: Asbestos and Other Natural Mineral Fibres; World Health Organization, Geneva (1986).