

MAINTENANCE OF MINERIT PRODUCTS

Composition

Minerit boards are fiber cement products. This means that they are in fact concrete which is reinforced with short fibres. The fibres give strength and flexibility to Minerit boards. Minerit boards do not contain asbestos.

In general Minerit boards consist of the following raw materials:

- Ordinary Portland Cement (a type of hydraulic cement usually made by burning a mixture of limestone and clay in a kiln)
- cellulose fibers (an inert carbohydrate, the chief constituent of the cell wall of plants, wood, cotton, hemp, paper, etc.)
- recycled paper (like newsprint)
- synthetic plastic fibers (polyvinylalcohol)
- hydrofobing or water repelling agents
- suitable mineral fillers such as:
 - finely ground lime stone (any stone consisting wholly or mainly of calcium carbonate; some varieties suitable for burning into lime)
 - fly ash from power plants (fine particles of ash of a solid fuel carried out of the flue of a furnace with the waste gases produced during combustion; used chiefly as a reinforcing agent in the manufacture of bricks, concrete, etc.)
 - mica flakes (any member of a group of minerals, hydrous disilicates of aluminum with other bases, chiefly potassium, magnesium, iron and lithium, that separate readily into thin, tough, often transparent and usually elastic laminae)

Applications and installation

Minerit boards can be used for internal and external applications. Please, follow installation instructions provided in Minerit brochures and installation guides.

Painting

In respect to painting Minerit boards behave like surfaces made of concrete. Minerit boards are alkalic by nature as well as concrete is. This is due to lime released during the hydration reactions of Ordinary Portland Cement.

The paints must be alkali-resistant. Most of the generally used water based paints are ok with Minerit- the most important exception is solvent based alkyd type paint, which does not stand alkalic environment. Usual water based paints are usually suitable to be applied on to Minerit surfaces. You need two layers of paint in order to get a good finish.

Efflorescence

As any other cementitious product also Minerit boards may show some efflorescence in external use immediately after installation provided that the weather conditions are likely to cause this effect.

Cementitious materials may contain free lime (Ca(OH)_2) as a byproduct of the [hydration reactions](#) of Portland Cement. This compound is slightly soluble in water and thus may travel from inside the pores to the surface of the product when dissolved in water. This also means that efflorescence can not be formed in dry conditions because liquid water is needed to transfer lime to the surface.

As soon as there's lime on the surface of the product a chemical reaction between lime and carbon dioxide (from air) occurs. It forms white and hardly soluble calcium carbonate. This can be seen as efflorescence on the surface of cementitious products. Efflorescence will be washed away by natural rainfall during a period of three to six months. Pure water is not a good solvent for calcium carbonate, but rain water contains some dissolved carbon dioxide which is absolutely needed in washing the efflorescence away.

Note that natural rainfall is the best method to remove efflorescence - you don't need to do anything, just wait and allow time to take care of the esthetical nuisance.

Washing

The surface of untreated Minerit board behaves like concrete. It has pores which tend to collect stains and dirt. The surface can be washed with water or with detergent (alkalic or neutral). Use a sponge or brush.

A high pressure spray is also efficient, but tends to erode the surface if the spray nozzle is too close to the surface. Use wide nozzle and don't wash closer than 30 cm (12") from the surface. Sweep the spray over the board and don't let the spray stop in one place for more than 5 seconds. Painted boards can take more washing than bare boards.

Remember, that the washing itself may leave marks on the surface and affect on the colour of the surface.

Painted surfaces are in general easier to clean than untreated surfaces. Use neutral or alkalic detergent, water and a sponge.

Graffiti

Natural grey concrete surfaces attract graffiti so it is better to paint the surface before the graffiti artists find it.

Graffiti can be removed in the same way as with concrete surfaces. Usual anti-graffiti methods can be used also with Minerit boards.

Repairing

The idea is that Minerit partitions and claddings do not need that much of maintenance or repairing. However, if a board is damaged it is best to replace it with a new one.

Health and safety

Neither the raw materials nor Minerit boards are hazardous to health. Minerit can be compared to concrete when health, safety and environmental aspects are evaluated. Because Minerit is made of Ordinary Portland cement, slaked lime is released during the curing period. Lime is an alkalic substance and therefore the boards are also alkalic. The pH value of fresh Minerit is about 10 - 11. Due to this alkalinity the dust is as irritating as the dust of any product made of concrete. Although the dust is irritating, it's not poisonous or hazardous.

Minerit does not contain asbestos. All Minerit products are completely asbestos free. Before year 1979 also Minerit boards were made of asbestos cement. After a four-year development project in 1975 - 79 Minerit switched to asbestos free formulations among the first companies in the world.

Environment

Constructions and applications made of Minerit products are intended to last very long time. The composition and production method make the boards durable and long lasting. The durability of Minerit products makes it possible to reduce unnecessary waste because there is no need to repair and re-build constructions made of Minerit products.

Minerit boards are made of fiber reinforced concrete which is not affected by weather or living organisms. The boards do not support the growth of fungi, bacteria, mold or algae. The boards are more or less inert in respect to biological phenomena. However, although the boards are inert it may be possible that there is biological activity on the surface of the boards. In this case the micro environment is somehow suitable for living organisms ie. if the humidity is high enough and some organic material is available to supply energy and nutrition to the organisms. But you must remember that the board itself will not be affected or deteriorated by these organisms (see the [results of microbiological tests](#) for Minerit SP in the USA).

Waste management

Minerit waste can be treated exactly the same way as concrete waste. It can be used as landfill or filler. The waste will not decompose - biological organisms are not able to handle Minerit waste. In this respect Minerit behaves like concrete or mineral waste.

Last update: Ari Järmälä / Aug 21, 1997, update May 27, 2004