

Granit-28Cure

Impregnation material for fresh and cured concrete

THE MATERIAL'S CHARACTERISTICS

Granit-28Cure is a chemical concrete hardener which comes in the form of a water-based penetrating liquid. This liquid consists of a solution of active silicates from potassium, sodium, and lithium, along with additional catalysts, and specially selected penetrants. Volatile organic compounds are absent.

Granit-28Cure increases the strength and wear resistance of concrete floors, while also increasing the service life of concrete infrastructure elements. It increases the adhesion of epoxy and polyurethane coatings to concrete. Granit-28Cure is also used for priming concrete surfaces before painting them with water-based emulsion façade paints.

The material penetrates deep into concrete, forming a dense crystal structure and a chemically resistant silicon-like surface. Crystals form in the microcracks and capillaries of concrete, and these then expand in the presence of moisture. The presence of such crystals limits the penetration of moisture into the concrete. The crystals do not create stress in the concrete because their expansion is limited to the pore volume.

Granit-28Cure increases the hardness and wear resistance of concrete, eliminates dusting, and effectively retains moisture in freshly processed concrete (although it is not to be used on plastic concrete). It differs from previously developed materials by means of its greater penetration depth and effective concrete compaction. It can be applied to reinforced concrete elements in marine infrastructure.

After a while, the moisture content of any concrete which has been treated with Granit-28 Cure decreases to levels of between 4-7%. This prevents corrosion rebars and stabilises the state of the concrete, including instances in which it is in the presence of chloride ions. Granit-28Cure also is a corrosion inhibitor for the rebars.

AREA OF APPLICATION

Granit-28Cure is intended to be used on the floors of loading terminals, on bridges and viaducts, on piers, at airports, on the floors of industrial enterprises and warehouses, in textile factories, bottling plants, refrigeration and freezing rooms, in car repair shops, in open and enclosed car parks, in healthcare facilities, in the pools of water treatment plants, in silo pits, and so on.

INSTRUCTIONS FOR USE

Granit-28Cure is used for protecting fresh or cured concrete, both with a hardened top layer and without a hardener ('topping').

The temperature range in the ambient air and for the surface which is being treated should be as follows: min +3°C, max +30°C.

Be sure to stir or shake well before use!

Cured concrete (aged over 14 days):

Apply on an oil-free surface; apply with a watering can or garden sprayer, then spread with a soft brush. Pumping units or watering machines can be used for larger areas. Positive experiences have been gained with the use of washing machines to apply impregnation materials.

The surface must be clean and visually dry. Remove any weak or broken concrete. Old concrete floors with a carbonised top layer must be sanded and vacuumed thoroughly. Fill cracks and pores with repair mortar. Apply 2-3 coats depending on the absorbency of the concrete.

Apply evenly. The surface must remain saturated with Granite-28Cure for a minimum of thirty minutes. Porous surfaces can quickly absorb the impregnation material. In this case, it will be necessary to repeat the treatment.

The application of a second coat is necessary when maximum protection is required against any penetration of oil or other contaminants or when treating porous surfaces.

The second coat is applied to the still-damp surface between 2-4 hours after the first coat has been applied (the interval depends upon the air temperature and wind speed). If, at this time, the surface of the concrete has become slippery and a gel has formed on it, it is easy to moisten the floor with water and then go over it with a brush again.

After between 40-50 minutes, remove any excess material with a rubber squeegee. This liquid is a waste product and is unsuitable for further use.

Fresh concrete:

These instructions apply to all concrete floors which have been trowelled, and to vertical walls after their formwork has been removed.

Start applying the impregnation after the concrete has been troweled with blades or a disc, when the concrete can be walked on without leaving marks on its surface; by this time the concrete can already absorb a small amount of liquid.

Apply Granit-28Cure in two thin coats using a backpack garden sprayer or other type of low-pressure airless sprayer (between 3-4 bar). The material consumption levels for one layer within the range of (0.04-0.05) l/m².

Immediately after the first layer has been absorbed, apply the second layer. When the concrete returns to its original colour, the concrete is considered dry. The time between applying the first and second coats is between

ten to thirty minutes, depending upon the prevailing weather conditions.

For the best results when using on outdoor sites, four thin coats should be applied with a total consumption rate of between 0.10-0.15l/m².

After applying the Granit-28Cure impregnation material, the equipment must be thoroughly washed with water.

Applications in hot weather (in temperatures of $\geq 25^{\circ}\text{C}$ and wind speeds of $\geq 8\text{m/s}$)

Application in severe weather conditions requires a highly qualified contractor, enough of equipment and personnel to be able to complete the job effectively and efficiently, and the clear organisation of the work itself.

Start applying the impregnation material immediately after troweling, when the concrete can be walked on without leaving marks on the surface. The method of application is described in the first part of these instructions.

Apply four coats of the impregnation material in succession, with a total consumption rate of between (0.10-0.12) l/m². For rough surfaces which have been disc-troweling, the consumption rates is the range of (0.12-0.15) l/m².

Between one and two hours after the completion of the impregnation process, start cooling the concrete with water.

If it becomes necessary to carry out the work under severe weather conditions, consultation is recommended with the impregnation material's manufacturer.

FEATURES AND BENEFITS

- Significantly reduces shrinkage cracking and concrete warping (concrete edge uplift)
- Withstands a 7-bar water pressure.
- Frost resistance: weight loss after 360 cycles does not exceed 2.8%.
- Wear resistance is increased by 50-200% (the result depends upon the concrete's class and porous levels).
- Surface hardness increases by 30-200% (the result depends upon the concrete's class and porous levels).
- Penetrates to a depth of 100mm.
- The concrete does not emit dust; its ability to breathe is preserved.
- Excellent resistance to organic acids, fats, and oil products. Short-term resistance to inorganic acids.
- Reduces the migration of moisture vapour.
- Protects rebar from corrosion. Must be used in concrete which has metal fibres (steel fibre).
- Protects against the penetration of chlorine ions. Reduces the accumulation of chlorine ions in elements of marine infrastructure by between 2-3 times.

- Increases the compressive and tensile strength of the surface layer of the concrete by 50-80mm, up to 20% of the total.
- Increases the grip and durability of asphalt pavement. Alkalis do not accumulate at the concrete-asphalt interface.
- Increases the adhesion of epoxy coatings and paints.
- Increases the durability of façade paints by three times.

CONSUMPTION

- For fresh concrete: approximately (0.10-0.15) l/m².
- For cured concrete: approximately (0.20-0.30) l/m².

The exact value depends upon the porous levels and surface structure of the concrete.

PRECAUTIONARY MEASURES

The composition is alkaline; wear protective glasses and gloves are necessary. In cases in which the composition comes into contact with the eyes or skin, rinse immediately with plenty of water.

A concrete floor which has been treated with Granit-28 Cure becomes slippery within a few hours after the treatment. Take extra care when walking on the finished floor to prevent the possibility of injury.

Carefully cover surrounding objects. If the impregnating material gets on any glass, lacquer, ceramic, aluminium, or stone surfaces, rinse them immediately with water.

GUARANTEES

With the proper application of Granit-28Cure, ALBEKA OÜ guarantees the preservation of the declared properties of any treated concrete for a period of ten years.

The manufacturer has no control over the process and conditions under which the impregnation material is applied. The manufacturer is not responsible for coating defects which may result from the incorrect application of the material. The manufacturer guarantees the quality of the material itself and its compliance with production standards.

The production of impregnation materials is an area which is continually being improved upon; the manufacturer reserves the right to change the technical description of the material without notifying consumers. With the introduction of a new description, the old technical description will no longer be relevant. Before using the material, please ensure you have the currently valid technical data sheet to hand.

PACKAGING AND STORAGE

The material is plastic supplied in 25L tins, 150L and 200L drums, and 1000L plastic containers.

Shelf life in tightly closed containers: two years.