Emer-Stop Creme

Technical Data Sheet

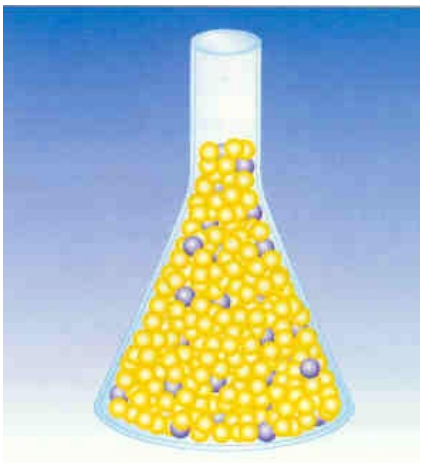
Deeply impregnating, iso-octyltriethoxysilane, water dispersed, thixotropic creme, water repellant and chloride ion protective, clear treatment for concrete

Uses

A penetrating, thixotropic cream designed to protect concrete and masonry from both water and chloride ingress, while still permitting water vapour transmission. Emer-Stop Creme is particularly useful for impregnating the exposed surfaces of reinforced concrete used in bridges, wharves, roads, on all atmospherically exposed concrete buildings and structures.

Advantages

- Outstanding penetration
- Chemically bonds to concrete substrates
- Optimum resistance to alkalis
- Drastic reduction in capillary water absorption
- Low volatility, no application wastage
- Allows water vapour transmission
- Thixotropic, can be applied in windy / elevated temperature conditions, even to vertical and soffit applications
- Easy to supervise; clearly visible applied material, easily measured material thickness
- Water based, solvent free, environmentally friendly



Description

Emer-Stop Creme is a thixotropic, water dispersed emulsion of iso-octyltriethoxysilane for use as a penetrating water repellent treatment for concrete. Being a reactive silicone based product, it chemically bonds with concrete and masonry substrates and becomes invisible once dry. Its penetration and subsequent chemical reaction with the concrete allow it to provide long term protection for concrete by significantly reducing the ingress of liquid water and any dissolved salts that the water may carry. The high concentration of active ingredient (> 80%) is unique among other emulsion type silanes.

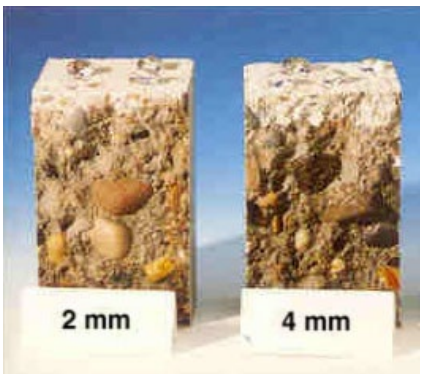
One of the most aggressive agents responsible for the breakdown of steel reinforced concrete in marine or coastal environments is chloride ions present in sea water and wind borne salt spray. Water soluble chlorides are able to penetrate the capillaries of unprotected concrete. When these chloride ions reach the reinforcing steel, corrosion will commence. Over time, the chloride-ion induced corrosion may affect the reinforcement steel's structural integrity.

Emer-Stop Creme works by penetrating the capillaries of the concrete, chemically reacting with the concrete to form a continuous hydrophobic coating over the surface. This hydrophobic (water repelling) coating prevents the ingress of liquid water carrying chloride ions.

The high concentration of active silane in Emer-Stop Creme combined with the low evaporation rate of the product, allows the maximum possible depth of penetration and protection to be achieved. Unlike other types of silane treatments, Emer-Stop Crème is highly visible at the time of application and can be easily applied to vertical or overhead soffit applications. The thixotropic nature of Emer-Stop Creme minimises waste and ensures that all of the silane applied to the substrate is available for penetration. This product application control is particularly important in ensuring the product is not lost into the environment, and can be used over waterways.

The highly visible nature of the product during application, allows an easy visual inspection to ensure that the entire surface has been covered. A single application of Emer-Stop Crème is usually sufficient. Application rates for Emer-Stop Crème may vary from 0.25 - 0.44 litres/m² depending on the porosity of the substrate. An application rate of 0.25 litres/m² will be sufficient for high quality off-form concrete with a high density and low absorption. An application rate of up to 0.44 litres/m² would be required for low quality porous concrete. On porous substrates a second application may be required.

Emer-Stop Creme



Typical penetration depth of Emer-Stop Creme on porous concrete. 0.25 litres/m² gave 2 mm penetration. 0.44 litres/m² gave 4 mm penetration.

After application, impregnated surfaces take on a whiteish appearance which clearly distinguishes them from untreated concrete providing a good visual indication of the uniformity of the application. The application thickness of the impregnant layer can be measured using a Wet Film Gauge. In response to the concrete quality and application rate, the active ingredient penetrates into the concrete within 30 minutes to several hours, and the milky white cream layer disappears completely.

Penetration Depth

Emer-Stop Creme is formulated to provide the greatest penetration depth of the active ingredient into the concrete, and thus provide optimum protection against the absorption of water and harmful substances.

The tremendous penetration depth is a function of the thixotropic consistency of Emer-Stop Creme, which ensures a long contact time of the silane active ingredient with the concrete surface. It is also a function of the high concentration of active ingredient. The penetration depth naturally also depends on the quality of the concrete.

Technical Support

Parchem offers a comprehensive range of high performance, high quality, repair, maintenance and construction products. In addition, Parchem offers a technical support service to specifiers, end-users and contractors, as well as on-site technical assistance.

Design Criteria

Emer-Stop Creme is best applied by airless-spray. A single application is usually sufficient. Depending on the absorbency of the substrate, up to 0.25 - 0.44 litres/ m² can usually be applied in a single operation - even to vertical surfaces and soffits - with minimal waste.

Properties

Specific gravity:	0.9 @ 25°C
Active component:	Iso-Octyltriethoxysilane
Concentration:	80%
pH value:	8

Specification Clauses

Iso-Octyltriethoxysilane water repellent for concrete

The penetrating water repellent treatment shall be Emer-Stop Creme, which has a minimum 80% active silane content of Iso-Octyltriethoxysilane, designed to reduce capillary water absorption by more than 80%.

Parchem recommends independent concrete core testing to confirm the actual penetration depth.

Preparation

Surfaces should be dry and free from contamination such as oil, grease, loose particles, decayed matter, moss, algal growth, laitance and all traces of mould oils and curing compounds.

It is best to wait at least two weeks for new concrete to cure and preferably four, before impregnating it with the application of Emer-Stop Creme

Cast-insitu and pre-cast concrete should be prepared using high pressure water cleaning to remove any concrete slurry covering the capillaries.

Remove coarse particles and dust from fresh, unsoiled surface with a brush or compressed air. Use superheated steam to clean weathered surfaces that are contaminated with oil or abraded rubber, etc, prior to treatment.

Only impregnate concrete that has a uniformly dry surface with no damp patches. Should it suddenly start to rain, stop treatment and cover the treated areas.

Protect plants, glass, asphalt, bitumen, plastics and all painted surfaces prior to application.

Application

Emer-Stop Creme is best applied to the concrete by the airless-spray technique, undiluted and at the required coverage rate. Brushes, lambskin rollers or a trowel may be used for smaller areas.

Up to 0.44 litres/m² may be applied in one operation to vertical surfaces and soffits. The exact amount depends on the absorbency of the substrate. If the concrete substrate is of a high strength and dense nature, hence not very absorbent, do not apply more than 0.25 litres/m² in one operation, as it may take several hours to penetrate completely. At higher application rates, the impregnating film may liquefy and there is a possibility that it may start to run. A second coat of Emer-Stop Creme may be applied, in order to achieve the desired coverage rate.

Emer-Stop Creme

Post application testing

During or on completion of the works the client will mark areas to be tested for depth of penetration by testing at a minimum rate of one core per 300 m² of treated concrete.

Emer-Stop Creme freshly applied

30 minutes after application

2 hours after application

Cleaning

Emer-Stop Creme should be removed from tools, equipment and mixers with clean water immediately after use.

Limitations

Emer-Stop Creme may hydrolyse with atmospheric moisture. Material from opened containers should be used within 48 hours or discarded.

Note: Emer-Stop Creme is designed for application to atmospherically exposed concrete and is not suitable in submerged or semi-submerged applications.

Please note that the impregnation depth is influenced by several factors, e.g. formulation, humidity and porosity of the concrete as well as the level of surface preparation undertaken. In certain circumstances the penetration will not reach the levels that are expected due to one or more of the above factors.

Estimating

Supply

555170:	200 litre drum
555180:	30 litre (25kg kit)

Coverage and yield

Emer-Stop Creme:	0.25 - 0.44 litres/ m² per coat
	4.00 - 2.25 m² / litre per coat

Note: these coverage figures are theoretical. Generally only one coat is required, depending on the absorbency of the substrate.

Storage

Emer-Stop Creme has a shelf life of at least 12 months, if stored in tightly closed original containers between 0°C and 30°C. The “Best use before” date on each lot is shown on the product label.

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