



**SILKON**  
ADDITIVES (INDIA) PVT LTD

# Silproof EC

Silproof EC is a two component acrylic polymer modified cementitious coating which consists of liquid acrylic emulsion. It requires only the addition of clean water at site to produce an easily brushable coating. It is a high performance elastomeric cementitious waterproof coating to protect atmospherically exposed reinforced concrete structures from attack by acid gases, chloride ions, oxygen & water. The product can be used on concrete, brick and block work substrates and is equally suitable for new and existing structures. The product is designed to reface and even out variations in concrete and masonry surfaces and bridge shrinkage cracks. It provides a seamless, flexible waterproof coating suitable for water tanks, reservoirs, drainage culverts basements, roofs, toilets & wet areas. The product provides a tough durable water resistant coating which can withstand light pedestrian traffic and also has excellent weather resistance for exterior applications.

## Product usages and advantages

- Approved for use in contact with potable water.
- Withstands high positive and negative hydrostatic pressures
- Excellent crack accommodation after immersion.
- Excellent bond to concrete and masonry.
- Long working life.
- Easy application by brush, roller, trowel or spray.
- Bonds to green or damp concrete.
- Effective barrier to sulphates and chlorides.

## Standards compliance

Silproof EC meets the requirements of BS 6920, WRAS. approved for use in contact with potable water up to 50°C. DIN 1048 : Water Penetration Test.

## Technical support

Silkon offers technical support service to specifiers, end users and contractors, as well as on-site technical support in locations all over the country.

## Properties

Pot life	: 60 min @ 35 <sup>0</sup> C
Mixed density	: 1.95g/cc (brushable consistency)
Color	: Grey
Application temp.	: Not less than 10 <sup>0</sup> C
Adhesion to concrete	: >1.5N/mm <sub>2</sub>
Toxicity	: Non-toxic
Water resistant positive side (DIN1048)	: 5 Bar
Water resistant Negative side (ITM/FTM-181)	: 2 Bar
Static crack accommodation	: 1mm

## Application

### Surface Preparation

All surfaces which are to receive the coating, must be free from oil, laitance, grease, wax, dirt or any other form of foreign matter which could affect adhesion. Typically, concrete surfaces can be cleaned using a high pressure water jet. Spalled surfaces or those containing large blowholes, and other such defects, should be repaired using Silproof EC or a Silkon approved repair mortar. Care must be taken when choosing the repair mortar to ensure that it has all necessary approvals for contact with potable water. If the surface contains small blowholes, typically less than 1 mm wide, the coating can be applied directly onto the substrate without the need for a treatment. Cracks which are less than 0.3 mm in width can be over-coated as long as the crack is not likely to open up to greater than 0.3 mm (this is greater than the maximum permissible cracks widths recommended in BS8007:1987, the British Standard Code of Practice for the design of concrete structures for retaining aqueous liquids). Cracks which are greater than 0.3 mm in width should be chased out to 4 mm in width and approximately 15 mm in depth. This should be filled with Silproof EC (applied using a Silkon 'G' Gun). When the material in the crack has hardened the coating should be applied over the crack



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## Mixing

The liquid polymer (5.0 kg) is poured from the plastic container into a plastic or metal drum having a volume of at least 25 litres. To this, the powder is gradually added (18 kg) whilst mixing with an approved spiral paddle attachment on a slow speed drill. Mixing is continued until a lump free slurry is obtained. This should take a minimum of 3 minutes and a maximum of 5 minutes.

Note: the preferred drill speed is between 280 to 640 rpm

## Pre-wetting of the substrate

Thoroughly dampen the substrate surface with water using a brush roller or spray bottle. High porosity substrates will require more dampening than dense substrates. Do not apply the coating when the substrate is wet, but allow the water to soak in until the substrate is just visibly damp prior to proceeding. Any excess water should be removed using a sponge. Any running water should be stopped with a suitable plugging mortar such as Fast Setting Mortar. Contact the local Silkon office for further advice on other suitable water stopping materials. For optimum use of the product, Silproof EC white should be applied as the first coat, with Silproof EC grey as the second coat. This gives a visual indication of coverage. The first coat should be applied at a wet film thickness of 1 mm (approximate coverage per coat is 1.8 kg/m<sup>2</sup> or 1 litre/ m<sup>2</sup>). To ensure the correct thickness is achieved measure out an area (for example 200 m<sup>2</sup>) then calculate how much material will be needed to cover this area. Monitor the coating thickness during application at regular intervals using a wet film gauge. Care must be taken to attempt to fill all imperfections such as blow holes during the application. If not, they can be filled while the coating is still fluid by using a dry sponge. If the coating has dried before these imperfections are found they can be filled using fresh material. All the mixed material should be used within one hour of mixing. Allow the first coat to cure for a minimum of 4 hours at 20°C per 50% RH and longer at lower temperatures or higher humidity's. The exact drying time will depend on surface temperature, relative humidity and air movement. High temperatures and/ or low humidity will reduce the drying time. This can vary from 1 to 16 hours. The first coat should be left to dry until firm and unmakeable to the touch. There is no maximum time between coats, however the surface may need cleaning with water prior to the application of the second coat to remove potential contamination. The second coat should also be applied at a wet film thickness of 1 mm. Pre-dampening of the surface is not necessary prior to applying the second coat. No curing membrane is necessary, however the freshly applied coating should be protected from rain and strong wind or until firm to the touch to prevent damage to the wet coating.

## Brush application

The most suitable type of brush is a soft bristled wallpaper paste brush (120 to 220 mm wide). Where larger areas are to be applied it is advisable to use a brush with a handle. Load the brush up well and spread the material to the required thickness.

If the brush begins to drag during application, do not add water to the material, but dampen the surface again. Finish in one direction for a neat appearance. For floor application, a soft bristled broom is recommended. Pour the material on to the substrate and then spread to the required thickness.

## Estimating

Supply	
Powder component (grey or white)	: 18 kg bag
Liquid polymer component	: 5 kg plastic container
Coverage	
Coverage rate at 1mm	: 11.4 m <sup>2</sup> per 23 kg pack

## Health and safety

Silproof EC powder is irritating to the eyes, respiratory system and skin. Avoid inhalation of dust and wear suitable respiratory protective equipment. Silproof EC liquid is not classified as dangerous. Silproof EC when mixed becomes highly alkaline. Wear suitable protective clothing, gloves and eye protection. For both components and for the material when mixed avoid contact with eyes or skin rinse immediately with plenty of water and seek medical advice.

## Storage

Shelf life is 6 months in unopened packs. The liquid component must not be allowed to freeze.