

Struseal® C514

Crystalline Capillary Waterproofing for Concrete Substrates

Uses

Struseal C514 is an economical cementitious coating system designed for waterproofing concrete against positive or negative hydrostatic water pressure in a wide variety of structures such as:

- Sewage treatment and water treatment plants
- Water tanks
- Concrete pipes
- Manholes

Advantages

- Penetrates concrete, seals capillary tracts & hairline cracks
- Contains no chlorides
- Easy to apply, cost effective in use
- Can be applied to new or old concrete in both interior and exterior locations
- Suitable above or below ground
- Surface damage will not affect the system

Description

Struseal C514 crystalline capillary waterproofing system is a blend of proprietary Portland cements, quartz aggregates and specialized chemicals.

In the presence of moisture, the active chemical additives in Struseal C514 penetrate concrete and react chemically with free lime to produce insoluble crystals. This crystalline growth reduces concrete porosity by blocking capillaries and filling hairline cracks caused by shrinkage or expansion.

Unlike membrane types of waterproofing which only provide a surface barrier, Struseal C514 continues to produce crystals in the presence of water therefore providing long lasting impermeability.

Properties

Appearance	Gray & White Cementitious Powder (special colours on request)
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Coverage	0.8-1.0 kg/m ² per application (brush) 1.2-1.3 kg/m ² per application (dry shake)
Application temp.	Not less than 5°C

Instructions for use

Surface preparation:

Old concrete

Concrete surfaces must be clean, sound and free from any contamination which may interfere with application process. Cleaning can be achieved by high pressure water jetting. High pressure water jetting is preferred method of surface preparation because mechanical cleaning, surface saturation & substrate roughening is simultaneously achieved. All surfaces to receive Struseal C514 must be pre-dampened.

New concrete

Following stripping of formwork, water jet or acid etch as above to remove all traces of form oil and surface laitance. Remove all debris from the work area before proceeding with thorough saturation (with clean potable water) of the area prior to the next stage of the works.

Mixing:

Slurry consistency

Add clean potable water to Struseal C514 at the rate of 8.25 litres/25 kg bag of Struseal C514. Mix thoroughly using a slow speed drill (300 - 500 rpm) & recommended mixing paddle until a creamy consistency is achieved. For mortar consistency, reduce water addition to 3.7 - 4.4 litres of clean potable water per 25 kg of Struseal C514, following mixing instructions identified above. Do not mix more material than can be safely used in 20 minutes at 25°C and 50% RH. If the mixture thickens, re-stir to reduce consistency, do not add water.

Application:

Dry shake for newly poured concrete

Use Struseal C514 directly from the bag. Wearing rubber gloves, distribute the powder evenly by hand over freshly poured concrete at the rate of 1.2-1.3 kg/m² per application, before final troweling works. It is recommended to evenly distribute 50% of the powder

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in one direction with the remaining 50% at right angles to the first application. Release the powder as close to the wet concrete as possible, this will minimize powder loss during windy conditions. For large areas, a rotary type spreader may prove beneficial. Two applications are recommended, with a roughened finish on the first application providing adequate adhesion of the second application. Finally, trowel finish to the desired profile.

Slurry coat for existing concrete.

Struseal C514 slurry coat can be applied with a soft brush, broom, or plaster sprayer. Ensure the slurry is worked well into openings, rough surfaces, joints and routed out areas. Make the second application when the first coat has reached initial set (usually within one hour dependent upon temperature). If the first coat has dried out, moisten the surface prior to applying the second coat. Active water leaks should be pre-sealed by using a rapid setting plugging mortar Strutop Gard (see separate data sheet), prior to application of Struseal C514.

Curing and protection

Struseal C514 applications must be kept moist for a minimum of 48 hours therefore following initial set, curing by water spraying is recommended. The treated surface shall be 'fog' sprayed a minimum of 3 to 4 times daily for the 48 hour period. In warmer climates, it is recommended to spray more frequently whereby the treated surface is kept constantly moist.

It is important to keep the treated substrate moist to allow crystal formation to occur. Protect surfaces from foot traffic for 48 hours or heavy traffic for 7 days. Freshly applied Struseal C514 must be protected from extreme weather conditions such as strong winds, high temperatures, rain and freezing for a period of not less than 48 hours following application.

Cleaning:

Immediately following the application of Struseal C514, clean all tools and equipment with clean water. Cured material can only be removed mechanically.

Limitations

- Struseal C514 should not be used when the temperature is 5°C and falling

- Full activation & effectiveness of Struseal C514 may require 2 - 3 weeks following application

Packaging

Struseal C514 is available in 20 kg bags.

Storage

Struseal C514 has a minimum shelf life of 12 months at 20°C if kept in a dry store in the original, unopened packs. The shelf life will be reduced at higher ambient temperatures.

Precautions**Health and safety:**

Struseal C514 is alkaline and should not come into contact with skin and eyes. Avoid inhalation of dust during mixing. Gloves, goggles and dust mask should be worn. If contact with skin occurs, wash with water. Splashes to eyes should be washed immediately with plenty of clean water and medical advice sought.

Fire:

Struseal C514 is non-flammable.

