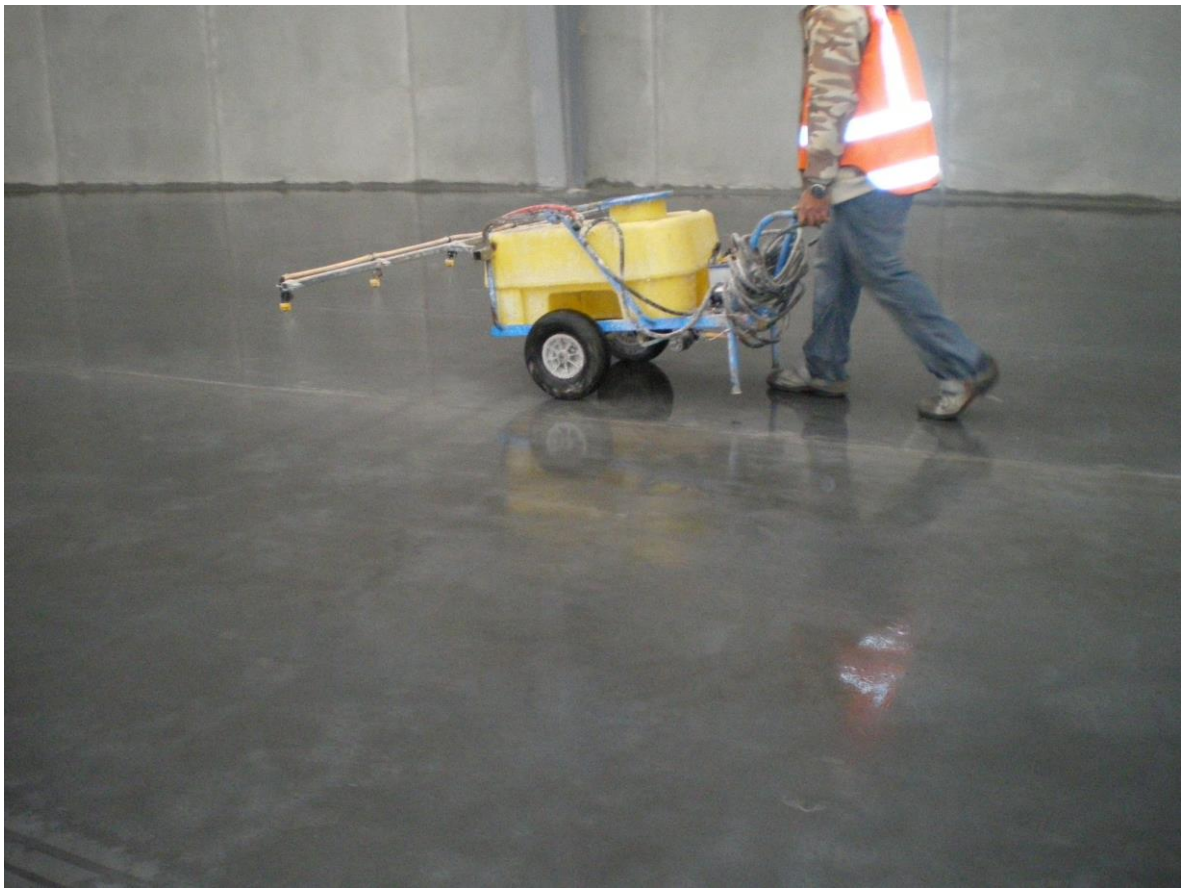
INNOVATIVE COATINGS NZ LTD

Product Data Sheet

REACTAFILL LS

CONCRETE DENSIFIER AND HARDENER



This new Nano - Lithium Silicate concrete densifier and hardener penetrates deep into the concrete, reacting with the soluble calcium compounds to create a breathable protective barrier while at the same time strengthening the floor surface.

The Nano-Particle size of **Reactafill LS** is not water sensitive and reacts quickly with the salts allowing the surface to harden and be polished in a much shorter period of time than other products.

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Sodium and Potassium Silicates leave soluble compounds that can contribute to crazing as they absorb water and swell, particularly the Sodium Silicate is water sensitive and will break down leaving the surface unbound and subject to erosion.

The Nano-Particle size of **Reactafill LS** is not water sensitive and reacts quickly with the salts allowing the surface to harden and be polished in a much shorter period of time than other products.

As cement hydrates it produces calcium silicate hydrate and as concrete hardens water reacts with cement to form calcium hydroxide plus silica which react to form CSH – the material that bonds the cement with the aggregate.
The hydration process produces more calcium hydroxide than is used up in the chemical reaction resulting in excess calcium hydroxide (also called free lime).
Over the longterm excess free lime is a primary cause of micro pitting in the concrete surface.
Reactafill LS provides a remedy by introducing additional silicate which reacts with the excess free lime to form more C-S-H which means denser harder concrete surfaces.
This chemical reaction takes place in the capillaries left by water that migrated out during the curing process.
The filling of the capillaries provides an additional degree of impermeability but the concrete retains its ability to breathe allowing water vapour to escape.

Features

- **Easy to apply**
- **Non flammable – non toxic**
- **No odour**
- **Safe to use in food handling areas**
- **Apply to new or used concrete**
- **Is not a film former**
- **Reduces salt penetration**
- **Stain/water resistant**
- **Dust proof makes easy cleaning**
- **High abrasion resistance**
- **Surface hardness greatly improved**
- **Protects against efflorescence and the leaching of lime**
- **Faster reaction times saving on labour time**
- **Faster access to polishing or buffing**

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General –

Lithium ions are stable as such and do not absorb moisture and swell. Being a nano particle it has a small ion with low viscosity giving deep penetration. As soon as it is dry to the touch it can be used and forms optimum water repellence and hardness in 7 days .
(Do not clean with acids)
Ph = **11.3-11.8**

APPLICATION PROCEDURES & RECOMMENDATIONS

This proprietary Lithium Silicate has the ability to penetrate deeply into the concrete to react with the calcium salts within and form insoluble silicate hydrate.
The coverage rate is normally greater than with sodium or potassium silicate hardeners. This reaction is more complete and faster than sodium silicate. The impregnation densifies and hardens the surface wear layer. The result is still breathable and will not flake or peel – efflorescence is eliminated and surface dusting is prevented. The floor can also be put into service very quickly.
The application can be done as soon as the floor is dry enough to walk on without ponded water.

- Protect plants, aluminium, glass and vehicles. Mask with suitable plastic film all affected areas. Check surface absorption by application of a light spray coat which should have a uniform effect overall. – this will ensure the results are desirable .
- Make sure the surface is free of contamination and apply with a low pressure sprayer, soft broom, squeegee or micro fibre pad.
- If using an acid etch rinse thoroughly and neutralise as an acidic lithium reaction could take place.
- Air and surface temperature is to be 4 deg C to 34 deg C .

Approx.usage rates

Steel trowelled concrete	10 – 12sq.m/litre
Brushed concrete	5 – 8sq.m/litre.

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- **Surface must stay wet** for 15 – 20 minutes - if conditions are hot apply a light mist coat of water to cool it down and reduce the premature drying of LS / densifier which will affect the penetration.
- After applying **Reactafill LS** make sure that any dry areas are kept damp by further application for 15 – 20minutes to achieve a uniform gloss. Do not allow ponding to occur, broom or squeegee off excess liquid.

    - After the 15 – 20 minutes wet the surface with water and use scrubbing machine or a stiff broom to remove any residue) - all residues **must be** removed.
    - After 1.5 – 2.5 hours the surface can stand light foot traffic because water is still evaporating from the concrete and treatment .Buffing can be done at this stage to increase gloss.
    - If grinding etc takes place or saw cuts before application of the **Reactafill LS** the surface is washed/scrubbed to remove any grinding dust or contaminants .
    - If acid etching beforehand neutralising the surface properly afterwards is vitally important as is vacuum removal of water and residue before applying the impregnation.
    - To increase gloss level use up to 3000grit diamond disk or buff as required – the surface sheen increases with time and cleaning methods.

The information given is a guide only and each job could vary depending on conditions – always trial an area first.

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