

## REACTIVE SEALERS

- ▶ A range of reactive sealers & liquid densifiers from Euclid Chemical that minimise contamination in new construction and existing concrete surfaces.

# Reactive Sealers from Euclid Chemical

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Concrete, although one of the most durable man-made building materials, is inherently porous, with a large number of air pockets. This means the material can break down over time unless a penetrating reactive sealer is applied to the surface, transforming it into a useable and resistant floor finish.

Silicate-based sealers, including lithium silicates, sodium silicates and fluorosilicates, have been used to improve the durability of concrete for decades, reducing porosity and increasing density to result in a surface that resists penetration of liquids, including oil and many chemicals.

**The Euclid Chemical Company**, represented by Flowcrete Asia across Asia Pacific, offers a range of penetrating reactive sealers designed to protect and beautify concrete floors in both industrial and commercial environments.

## Benefits

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Silicate and silicate blend densifies and seals in one step



Reduces porosity and increases density of the concrete surface



Resists penetration of liquids, including oil and many chemicals.



Provides a low sheen lustre that enhances the appearance of the concrete surface.



Can contribute to LEED points.



Minimises tyre marks and enables them to be easily removed. Will not blush, peel, flake or wear away.

## Application Suitability

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Distribution Centres



Manufacturing Plants



Warehouses



Retail & Supermarkets

## Technical Profile

### VOC CONTENT

≤5 g/L

### ABRASION RESISTANCE

ASTM C 779  
(Compared to untreated  
concrete)

30 mins: ~80%  
improvement  
60 mins: ~20%  
improvement

### COEFFICIENT OF FRICTION

ASTM F 1679

Dry: 0.81  
Wet: 0.72

### LIQUID REPELLENCY: (RILEM METHOD 11.4)

Water absorbed in 24  
hours

Untreated Concrete: 5 ml  
Treated Concrete: 1 ml

### SPEED OF CURE

21°C

Light Traffic

4 to 6 hrs

Full Traffic

24 hrs

# Euco Diamond Hard



A liquid densifier and sealer which penetrates, reacts and bonds within the surface to produce a harder, dust-proof and liquid repellent surface.

Euco Diamond Hard provides an attractive, slip resistant sheen to concrete that never peels, fades or wears away.



Reduces porosity and increases durability of the concrete surface



Minimises tyre marks and enables them to be more easily cleaned and removed



Can be applied quickly and easily to new or existing concrete



Contributes to the LEED certification of your next building project

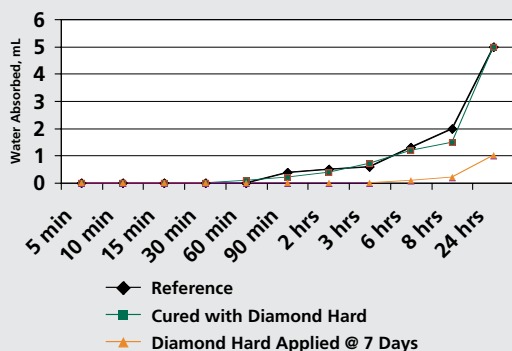


Silicate materials have been used to improve the durability of concrete

## Test Method Explanation

### Liquid Repellency

RILEM tubes provide a simple method for measuring the amount of water absorbed by a concrete surface within a specified time period. RILEM Test Method 11.4 is used to assess the degree of protection provided by a surface sealer or treatment.



### Coefficient of Friction

4000 psi concrete, steel trowel finish

Diamond Hard applied after 7 days at 200 ft<sup>2</sup>/gallon Coefficient of Friction Results:

Dry – 0.81 Wet – 0.72 A minimum coefficient of friction value of 0.5 has become the commonly accepted threshold for classifying a surface as slip resistant.





## The Science Behind Euco Diamond Hard



The silicate in EUCO Diamond Hard reacts to form extremely hard crystals in the pores of concrete surfaces.



The silicate in EUCO Diamond Hard also reacts to create a liquid-repellent seal on the concrete surface.



The synergistic activity of the silicate & silicate blend in EUCO Diamond Hard seals and strengthens the concrete.

### How Does it Work?

The silicate compounds present in reactive sealers chemically react with soft calcium hydroxide (also known as portlandite) in the surface to produce a much harder calcium silicate hydrate (CSH) – the primary strength-providing portion of concrete paste. The silicate also reacts with the concrete to form a hydrophobic polymer within the pores and on the concrete surface resulting in a strong, liquid repellent surface.

# Chemical Resistance

Acids	Effect
10% Lactic	M
10% Citric	M
Glacial Acetic	M
10% Acetic	M
10% Formic	M
10% Oxalic	M
10% Tannic O	O
10% Chromic	M
10% Hydrochloric	M
Concentrated Hydrochloric	S
10% Nitric	S
Concentrated Phosphoric	M
10% Sulfuric	M
Concentrated Sulfuric	S

Hydraulic Fluids/Oils/Fuels	Effect
Skydrol	O
Automatic Transmission Fluid	O
Brake Fluid	O
Gasoline/Jet Fuel	O
JP-4 Kerosene	O
10W30 Motor Oil	O
Aircraft Motor Oil	O
Heating Oil	M

Bases	Effect
5% Ammonium Hydroxide	O
Concentrated Ammonium Hydroxide	O
50% Potassium Hydroxide	M
50% Sodium Hydroxide	M
Concentrated Calcium Hydroxide	O
10% Potassium Hydroxide	M
10% Sodium Hydroxide	M

Salts (30% Solutions)	Effect
Ammonium Chloride	M
Ammonium Nitrate	O
Calcium Chloride	O
Calcium Hypochlorite	M
Cupric Chloride	M
Ferric Chloride	M
Ferric Nitrate	O
Magnesium Chloride	M
Potassium Chloride	M
Sodium Bicarbonate	O
Sodium Chloride	O
Sodium Chloride - Saturated Solution	M

Solvents	Effect
Acetone	O
Benzene/Xylene	O
Carbon Tetrachloride	O
Cyclohexane	O
Dichlorobenzene	M
Dichloroethane	M

Alcohols	Effect
Benzyl Alcohol	O
Ethyl Alcohol (Ethanol)	O
Isopropyl Alcohol (Isopropanol)	O
Methyl Alcohol (Methanol)	O
Ethylene Glycol (anti-freeze)	O
MEK	O

Other Chemicals	Effect
Formaldehyde	O
10% Urea	O
Cola	O
Mustard	O
Ketchup	O

## Technical Profile




<b>VOC CONTENT</b>	
<5 g/L	
<b>SPECIFIC GRAVITY</b>	
1.10	
<b>PH</b>	
11.7	
<b>SOLIDS / ACTIVE CONTENT</b>	
15%	
<b>FREEZE POINT</b>	
0°C	
<b>DENSITY</b>	
1.1 kg/L	
<b>SPEED OF CURE:</b>	<b>21°C</b>
Light Traffic	4 to 6 hrs

## UltraSil Li+



A water-based lithium silicate solution used to densify, seal and dustproof concrete surfaces.

UltraSil Li+ penetrates and forms dense calcium silicate hydrate particles that block concrete pores, resulting in a more durable, easier to clean surface that never fades away.

-  Seals, densifies and dustproofs in one application
-  Permanent treatment that never peels off
-  Can contribute to LEED points (EQ Credit 4.2)

## Eucosil






## Technical Profile

<b>VOC CONTENT</b>	
<5 g/L	
<b>SPEED OF CURE</b>	<b>21°C</b>
Foot Traffic	4 to 6 hrs
Wheeled Traffic	4 hrs

A reactive water-based sodium silicate sealer solution used to densify and dustproof concrete.

Eucosil introduces additional sodium silica that reacts with the excess calcium hydroxide to form more CSH becoming an integral part of the surface, making it denser and easier to maintain.

-  Seals, densifies and dustproofs in one application
-  Treated concrete resists penetration of water and many chemical substances
-  Water based formulation with no odour and low VOC content

## Did You Know?

What makes silanes, siloxanes, and siliconates different from other coatings is the fact that they actually penetrate into the concrete to create a protective barrier.

Other sealers such as acrylic, epoxy, and polyurethanes are topical in nature. Which means they sit on the surface and form a protective film or coating.

For a full Technical Profile, contact your local Technical Department.

## Technical Profile

<b>VOC CONTENT</b>	
111 g/l	
<b>SPECIFIC GRAVITY</b>	
1.03	
<b>PH</b>	
9.5 - 10.5	
<b>SOLIDS / ACTIVE CONTENT</b>	
21 - 23%	
<b>FREEZE POINT</b>	
0°C	
<b>SPEED OF CURE</b>	<b>21°C</b>
Light Traffic	1-2 hrs
Full Traffic	24 hrs

# UltraGuard



A water-based polymeric protectant that improves the appearance and durability of concrete floors.

Contains a migratory stain-resistant additive, activated with high-speed burnishing and is especially effective the concrete has already been densified with Euco Diamond Hard or Eucosil.



Provides excellent stain resistance to a wide range of common liquids

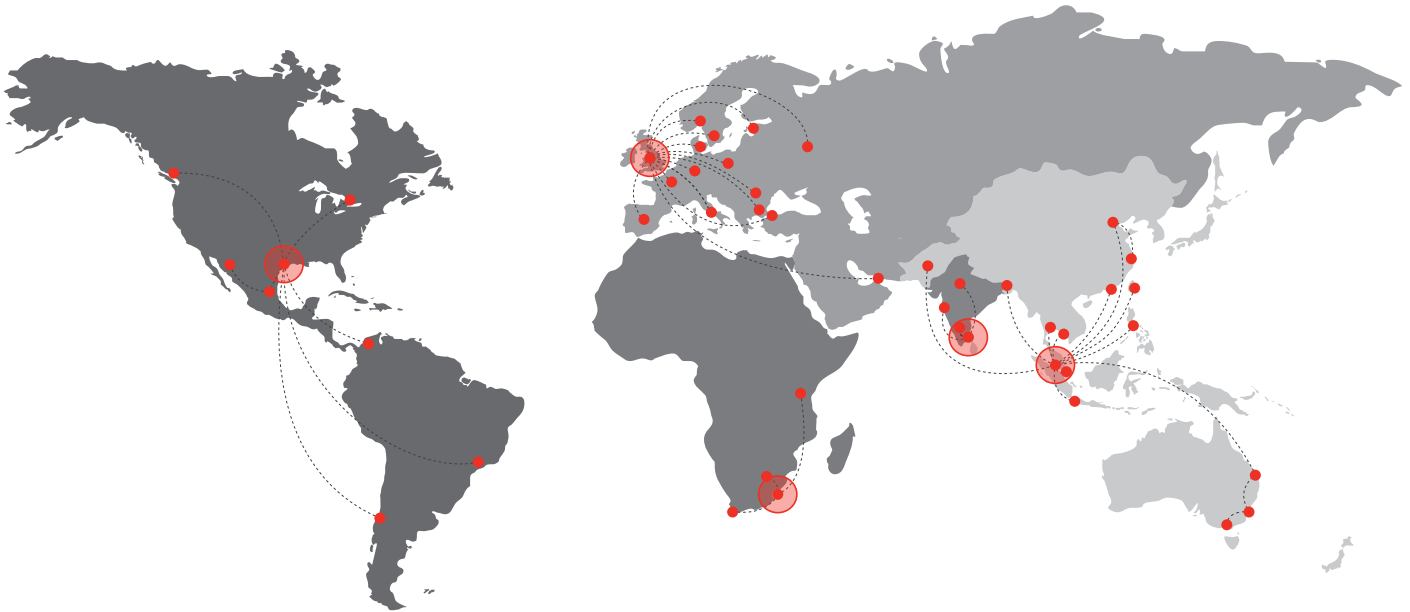


Treated concrete is more dense, durable and easier to maintain



Protects coloured or stained concrete from UV degradation and staining





## Flowcrete

World leader in seamless resin flooring solutions and other specialist coatings.

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