

LIQUID CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION SYSTEM

DESCRIPTION

Contite is a clear sealing and waterproofing subsurface membrane which is solvent free, non-toxic, odourless and eco friendly. It is a spray applied colloidal liquid that penetrates the concrete's surface and reacts with the cement paste matrix to form an insoluble gel sealing pores, capillaries and cracks creating a below surface barrier against water and water borne salts ingress. As long as water is present **Contite** remains active and will seal hairline cracks both present and future. **Contite** allows the passage of water vapour from the inside of the structure (the concrete breathes) whilst waterproofing/sealing the surface against sea water, aggressive ground waters, waste water and certain chemical solutions.

USES & ADVANTAGES

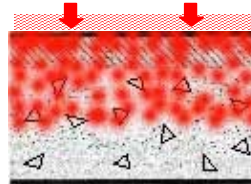
Contite can be used to protect various concrete structures including marine and coastal structures, water storage tanks, highways, runways, roofs, decks, bridges, cut & cover tunnels, silos, car parks, swimming pools, precast panels, pipes, etc. Unlike solvent-based, membrane forming sealers **Contite** is environmentally friendly. Since **Contite** penetrates into the concrete, it won't scratch, peel or damage.

Advantages include:-

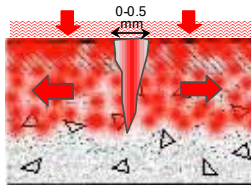
- Reduces porosity & permeability.
- 100% Trafficable. Slip resistance improved.
- Reduces Chloride & sulphate penetration by up to 90%.
- Prevents concrete cancer/corrosion.
- Improves concrete durability.
- UV resistant no topping or protection required. Heat reflective membranes may be applied over the top.
- Cannot be damaged, no debond as subsurface membrane.
- Existing cracks up to 2 mm. width may be sealed.

- Cracks developing on treated surfaces up to 1 mm. may be sealed avoiding leakage through the slabs.
- Non toxic, odorless, safe for potable water tanks.
- Fast tracks projects.
- Remains active for life of concrete.
- Overlays of asphalt do not delaminate Ballast will not damage system.
- No protection boards required when backfilling.
- Hairline cracks that may develop reseal on contact with water (self healing).
- Can use with concrete containing PFA, GBFS, or Silica fume.
- Withstands thermal stresses.
- Increases useful life of structure.
- Provides additional resistance to dilute acid & alkali attack.
- Increases concrete's surface hardness.
- Very easy to apply and cannot be damaged during construction.

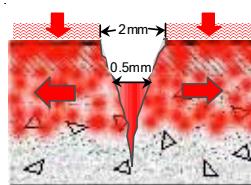
How Contite Seals Concrete & Cracks (Not to Scale)



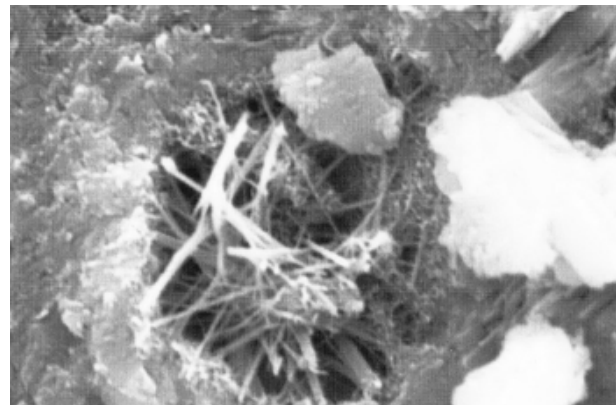
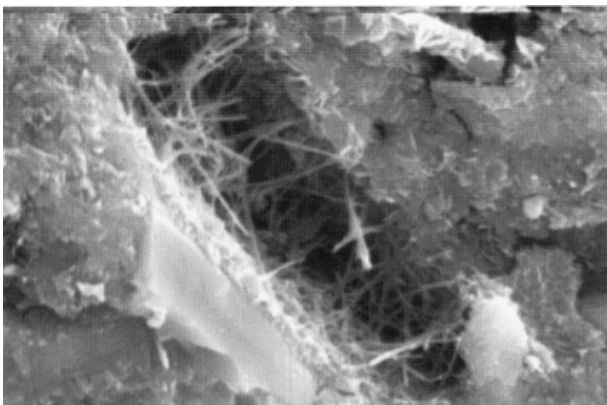
Contite penetration is determined by concrete grade & porosity



0-0.5 mm. crack
Stresses develop & cause crack. Crack sealed by **Contite**.



Cracks >0.5 mm.
The surrounding area of the cracks mouth is sealed. As the crack narrows it is sealed by **Contite**. The cracks mouth may be sealed via a combination of calcium acetate & **Contite** or **Contite** on its own.



Crystals Forming Through A Void 350-400 μm in Width. Some damage is shown to the crystal through the coring process of the Sample. (Photograph has been taken 15 cm into the concrete)

LIQUID CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION SYSTEM

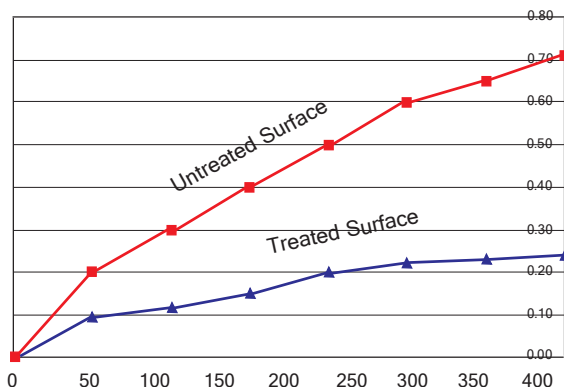
STANDARDS

Conforms to: Water Permeability Test JIS 1404
ISAT BS1881 Part 5 1970
BS 6920 Contact with Potable Water

PROPERTIES

Appearance:	Transparent Liquid
Specific Gravity: ASTM D1475	1.22 ± 0.02 kg/ltr
Toxicity: BS 6920-1	Non Toxic
pH: BS 1377-3	11-12
Drying Time: ASTM D2939	min. 2 hrs
Recoat Time:	5-6 hrs
Paintability:	Excellent
% Non Volatile Content:	Approx. 28 ± 2%
Surface Hardness: ASTM C805 (Impact test)	>15% increase over untreated surface
Explosion Hazard:	None
Flash Point:	None
Water Permeability: JIS 1404	>85% improvement over control

Relationship of water absorption as function of time



Contite treated concrete shows dramatic reduction of water absorption over plain concrete (AIT2003).

COVERAGE RATES

5 m² / Litre applied by spray.

DESIGN CRITERIA AND SPECIFICATION

The waterproofing system shall penetrate the concrete and become an integral part of it forming insoluble complexes of calcium silicate hydrate gel in the pores, cracks and capillaries.

The material shall be non toxic and clear. It shall reactivate to seal hairline cracks which develop in the future.

The concrete shall be placed and compacted to avoid honeycombs and shall be cured for up to 28 days prior to application. Falls shall be to drains and the concrete

finished with an open textured finish or after finishing by acid etching, waterblasting or grinding to provide an open pore structure.

Construction Joints, Parapets, and Penetrations:

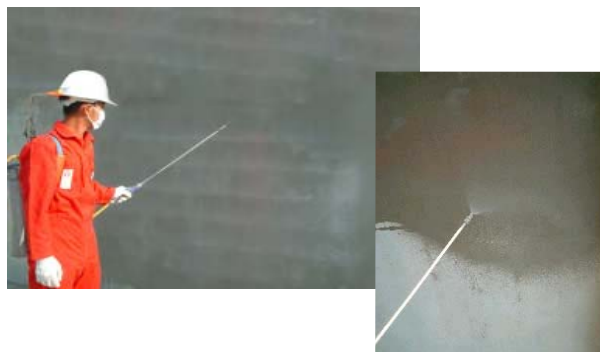
Ensure all construction joints are roughened, clean & well prepared with exposed aggregate. Install **Contite Waterstop**. At parapets either pour insitu or treat surface before installing the parapet with **Contite Seal** and install **Contite Waterstop** in the joint.

All drains, pipes, penetrations shall be sealed with **Contite Waterstop** or **Conflex LM** polyurethane joint sealant. Design detailing is important, **Contite** seals cracks, capillaries and pores in concrete. It does not fill major honeycombs, voids or large structural cracks.

APPLICATION & SURFACE PREPARATION

- It is desirable to apply **Contite** at least 2 weeks after pouring concrete, 4 weeks is recommended. It may be applied at any later time and is especially effective on old concrete.
- **Contite** may be applied to concrete immediately after forms are stripped acting as a curing compound and sealing material. Performance is not as effective as when applied after 2 weeks. A second treatment is recommended 28 days later.
- **Contite** may be applied to concrete treated with other compounds providing, these are removed properly, however, oils or paints may prevent penetration.
- Existing cracks up to 2 mm. may be sealed by flooding on to the crack and in conjunction with calcium acetate in some circumstances.

Before any concrete is treated the area must be thoroughly cleaned. The surface should be first swept with a broom to remove loose dirt. Then wet and scrub with soap or cleaning compound wash off and ensure clean. Allow concrete to dry thoroughly for at least 24 hours depending on humidity before applying **Contite**.



LIQUID CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION SYSTEM

Contite can be applied by spray, brush and roller applications.

A back pack spray will achieve 100-150 m² per hour. Eye protection should be used when spraying.

Contite should be flooded onto the concrete surface. If applied by brush or roller the product must be flooded on first. For vertical surfaces spray equipment is only appropriate.

Agitate material in drum before application. Apply only to concrete which is dry to touch (no damp patches). If it rains before **Contite** has dried reapplication is required. Sealing of joints etc should be carried out before application. Apply with low pressure in low wind conditions and allow to dry for 2-6 hours before flooding with water. Re-spray water/flood with water on the second and third day.

In below ground backfilled concrete surface applications ensure concrete surfaces are dry before application. If high hydrostatic pressure is anticipated consult Cormix first in these instances.

Contite should not be applied at temperatures below 5°C (in high temperatures apply in the morning or late afternoon) if it is about to rain or in high wind conditions. Cracks must be located & flooded with material at one litre per 3-4 linear metres.

Pond testing will determine if leaks are apparent and should be continued for at least 12 hours. Retreat the area if leaks are found.

Equipment:

Use simple hand spraying knapsack for small areas or motorized sprayers for large areas. A simple knapsack spray can achieve 100-150 m² per hour.

IMPORTANT NOTES AND LIMITATIONS

Contite should not come into contact with glass. Paint in general will not be effected by **Contite**, however, if **Contite** comes into contact with paintwork remove with

water. Before applying **Contite** where tiles or other material may come into contact with **Contite** consult Cormix's technical department.

Contite is not designed to be highly resistant to strong acid or alkali attack. It is not a repellent surface coating. The ability of **Contite** to seal concrete does not include leaks due to structural faults or mechanical damage. The repair of leaking structures will generally take 3 days to achieve a seal, however, the seal may take longer.

If other waterproofing additives have been used in the concrete or mortar consult Cormix. If curing compounds are used they should be degradeable and removable. The concrete or mortar surface to receive **Contite** must be clean and free of all oils and grease. If floor hardening is the main consideration use **Contop S**. **Contite** should not be used on the negative side of structures which are continuously damp. Consult with Cormix if to be used with pigmented concrete. Roof details eg. construction joints, penetrations, fixtures, expansion joints etc. must be adequately sealed. Contact Cormix for details.

The surface treatment of the concrete by power floating or vacuum dewatering can make the surface of the concrete very dense and impermeable. After such treatment it is advisable to test a small area of concrete prior to the application of **Contite** to ensure that impregnation occurs and that the surface is not made glassy or white.

Consult Cormix before application in cases of high hydrostatic pressure.

Agitate material in drum before application.

PACKAGING

25 litre plastic pails or 200 litre drums.

STORAGE AND SHELF LIFE

Store in the shade do not allow to freeze. Shelf life is 12 months in original sealed containers. Stir before application.



Floating bridge waterproofing & corrosion protection



Reservoir waterproofing

LIQUID CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION SYSTEM

HEALTH AND SAFETY

If swallowed increase liquid intake for 24 hours. Consult a doctor. Eye contact should be avoided by the use of eye protection if contact is made flush with large amounts of water continue for several hours. Where in contact with skin remove with water. Avoid direct contact with eyes at all times. In enclosed environment use breathing apparatus.

TECHNICAL SERVICE

The Cormix International Technical Service Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

QUALITY ASSURANCE

ISO 9001 : 2008 verified by TUV Nord.

CONTACT DETAILS

Cormix International Limited

Regional Office,
89 Romklao Rd., Sansab, Minburi, Bangkok 10510
Tel. (66 2) 917 3955-8, 543 8890
Fax. (66 2) 917 3959, 543 8891
<http://www.cormix.com> E-mail : info@cormix.com



NOTE : Every reasonable precaution is taken in the manufacture of all CORMIX-products to ensure that they comply with CORMIX's high standard of quality. The recommendations and properties of the product are based upon what is believed to be the most reliable information available, and are not intended as recommendations which infringe on other patents. Although all CORMIX-products are subject to rigid quality tests, no specific guarantee can be given, because results depend, not only on quality, but also on other factors beyond our control. We welcome therefore consultation in the event of doubt concerning application, or performance, and point out that oral recommendations, which vary from the instructions contained herein, are not binding without written confirmation by CORMIX. All transactions shall be subject to our terms and conditions of sale-delivery-and-service. This data sheet supersedes the previous one and a reprint may be issued without notice to supersede this edition, as and when deemed necessary. The information given in this leaflet is to the best of our knowledge true and reliable. Field service where provided does not constitute supervisory responsibility. Our guarantee is therefore limited to the quality of materials delivered.