

## CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION THROUGH AIR CURING SYSTEM

### DESCRIPTION

**Contite Seal AC** is based on OPC, fine graded sand and high grade special chemicals which helps the system to react with free lime and moisture present in the capillary track of the concrete by means of air curing, without water curing. The unique chemicals present in the formula helps to form insoluble complex crystals penetrating into the capillary track of the concrete forming a sub surface membrane effectively sealing the concrete. The layer formed 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 Seal AC** can be applied to all structurally sound concrete. Typical areas of application are :- sewage and waste water treatment tanks, reservoirs, tunnels, manholes, caissons, underground vaults and structures, foundations, parking decks, planter boxes, roof gardens, podiums and swimming pools. **Contite Seal AC** provides concrete protection against waste water, sewage, certain chemical solutions, dilute intermittent acids, carbonation, salt water, sulphates, and other harmful materials.

**Contite Seal AC** is a good replacement for the hazardous and tedious method of preformed SBS membrane systems for basement waterproofing.

#### Advantages include:-

- Air curing system.
- No water curing or polythene sheet covering required from the day one after application.
- Forms subsurface membrane.
- Good adhesion to concrete substrate.
- Can be used as final topcoat or finish coat.
- Can be easily applied by brush, roller or spray.
- Can penetrate greater than 30 cm into the concrete depending upon concrete porosity, grade & mix design.
- Resistant to most aggressive substances in the pH range 3-11 constant contact, and 2-12 periodic contact.
- Protects concrete and steel rebar from deterioration.
- Non toxic & can be used in potable water tank.
- No solvents. No harmful vapours.
- Can apply to green or moist concrete.
- Fast tracks projects.
- Becomes an integral (internal) part of the concrete therefore it does not rely on the coating to protect or waterproof concrete.
- Seals minor shrinkage cracks and will reactivate after many years in the presence of water.

- Does not require costly surface priming or leveling prior to application as for other coatings.
- Cannot puncture, tear or come apart at the seams as with other protection systems.
- Less costly to apply than other systems.
- Does not require protection from backfill.
- Use in underground structures from the inside (negative side).
- Extensively used for concrete repair work and is particularly useful to apply on the negative side of water retaining or underground structures both above and below grade.

### PROPERTIES

<b>Component:</b>	Single
<b>Form:</b>	Fine Grey powder
<b>Fresh Wet Density:</b>	1.85 ± 0.05 kg/ltr
<b>Bulk Density:</b>	Approx. 1.07 g/cc
<b>Chloride Content:</b>	Nil
<b>Water Permeability:</b>	>90% improvement over control (JIS A1404 / BS EN12390-8)
<b>pH:</b>	11-12
<b>Toxicity:</b>	Non toxic (can use in potable water) (BS 6920-1)
<b>Chemical Resistance:</b>	can resist chemicals ranging from pH 3-11 (ASTM C-267)
<b>Yield:</b>	21 ltr/25 kg bag

*\* Properties are typical under laboratory conditions and do not constitute a specification. Field trials are recommended.*

### SUBSTRATE PREPARATION

Concrete surfaces to be treated must be clean and free of laitance, dirt, films, paint, coatings or other foreign matter. The surfaces must also have an open capillary system for the **Contite Seal AC** treatment. If surfaces are too smooth the concrete should be acid etched, lightly sandblasted or waterblasted.

Structural defects such as cracks, faulty construction joints and honeycombing should be routed out to sound concrete and repaired in accordance with Cormix's specification. (It should be noted, however, that **Contite Seal AC** is not designed for use in expansion joints or chronic "moving" cracks.) Horizontal surfaces should preferably have a rough wood float or broom finish.

#### Wetting Concrete:

Prior to the application of **Contite Seal AC**, concrete surfaces must be thoroughly wetted with clean water (concrete should be saturated) to aid the proper curing of the treatment and ensure the growth of the crystalline formation deep within the pores of the concrete. Excess surface water should be removed before the application.

# Contite<sup>®</sup> Seal AC



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### MIXING

Mix one 25 kg bag with 13.75 - 14.25 litres of clean and chilled water approx. 10°C during hot and humid conditions. Do not mix too wet otherwise the mix may crack and spall when drying. Always add powder to water. Mix until smooth and uniform mixture is formed with no lumps. Do not rework stiff material by adding more water. Mix sufficient material to use within 30 minutes.

### APPLICATION METHODS

#### Slurry coat:

Apply **Contite Seal AC** with a stiff fiber brush or roller. Scrub well into the damp wall filling all pores and finish with final strokes in one direction. Keep a wet edge. After the first coat has set but while it is still green apply a second coat, if this is not possible prewater before application of the second coat.



Brush application

#### Dry Shake Method:

**For Newly Poured Concrete** - Use **Contite Seal AC** directly from the container. Wearing rubber gloves distribute the powder evenly by hand over the freshly poured concrete at 1.6 kg/m<sup>2</sup> before the final trowelling work. It is recommended to distribute approximately 50% of the powder in one direction with the remaining 50% at right angles to the first application.

Release the powder as close to the wet concrete as is possible.



Dry shake to lean concrete

**For Under Slab Waterproofing** - Ensure that all debris is removed from lean concrete's surface including soil, grease, oil etc. Either apply in slurry coat or sprinkle by dry shake method on to the concrete just before pouring the slab at 1.2 kg/m<sup>2</sup>. If delays in pouring

concrete keep **Contite Seal AC** moist by mist/fog spraying water.



Power Trowelling

#### Existing Joints:

Construction joints, cold joints and non-leaking joints greater than 0.25 mm wide must be routed out to a minimum 25 mm wide by 25 mm in depth to reach sound concrete, the profile of the routed joint should form a "U" shape.

**Contite Seal Mortar** should be mixed with water to provide a dry pack material which must then be rammed into the routed out joint.

#### New Construction Joints:

Install **Contite Waterstop** butyl rubber & bentonite waterstop at the centre of the joint at least 7.5 cm. from the concrete's exterior. A dry pack sealing strip of **Contite Seal Mortar** should be rammed into a prepared rout at least 25 mm. by 25 mm. Optionally & if high water pressure is anticipated a coat of **Contite Seal AC** Slurry or dry shake may be applied to the joints surface & over the waterstop at 1.5 kg/m<sup>2</sup>. Keep material moist by mist spraying with water before pouring concrete.

#### Leaking Cracks:

Should be prepared as above to form a chase of 25mm wide to approximately 35 to 50mm deep. Remove all debris from the work area before proceeding with thorough saturation of the area prior to the next stage of the works.

Dry pack **Contite Seal Mortar** into the prepared rout. The **Contite Seal AC** treatment should be applied with a semi-stiff bristle brush, janitor's broom (for large horizontal applications) or with specialized spray equipment.

**Contite Seal AC** must be uniformly applied under the conditions and quantities specified. When a second coat is required, it should be applied after the first coat has reached an initial set but is still "green" (less than 48 hrs.). Light pre-watering between coats may be required due to drying. For best results, application should take place at temperatures above 40°F (4°C).

## CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION THROUGH AIR CURING SYSTEM

### CURING

Curing either by water, wet hessian cloth, curing compound or polythene sheet is not required for this product. This is an air curing product. Only during hot and humid conditions to avoid fast water loss, it may be protected by using polythene sheet for 24 hrs after immediate application.

### OVERCOATING

All **Contite Seal AC** treated surfaces to receive epoxy coating or to be painted must be neutralized with a solution of **Contite Seal AC** cleaner. The **Contite Seal AC** application has to be aged for a minimum period of two weeks before application of epoxy.

### WATER RETAINING STRUCTURES

For concrete structures that hold liquids (e.g. reservoirs, tanks, etc.), **Contite Seal AC** should be allowed to set for 12 days before filling with liquid. Allow at least 48 hours before foot traffic.

For **Contite Seal AC** to fully activate may require 2-4 weeks after application.

### LIMITATIONS

**Contite Seal AC** should not be applied to a dry surface.

### CONSUMPTION RATES

Use as single coating on above or below grade concrete, or as the first of a two coat application where two coats are required. Also use as a Dry-Pac for sealing strips (fillets) at construction joints, and for repair of cracks, faulty construction joints and honeycombing and as dry shake on fresh concrete or on lean concrete under slabs. As a general rule, it may be taken that for a two-coat slurry application, the rate of use of **Contite Seal AC** should be between 0.5 kg and 0.75 per square meter per coat. As a minimum one coat may be applied at 1 kg/m<sup>2</sup>. If in doubt consult Cormix International Technical Service. The following is a guide to material consumption.

**Dry Shake Method:** 1.6 kg/m<sup>2</sup> before final trowelling work.

**Backfilled Concrete Surfaces, Internal Walls & Water Retaining Structures:** 2 coats applied at 0.75 kg/m<sup>2</sup> per coat by brush or spray or 1 coat at 1 kg/m<sup>2</sup>.

**Backfilled Concrete Surfaces with Hydrostatic Pressure:** 2 coats at 0.75-1 kg/m<sup>2</sup>/coat. If high hydrostatic pressure is anticipated consult Cormix.

**Construction Joints:** 1.5 kg/m<sup>2</sup> applied in slurry coat or dry powder consistency just before pouring concrete.

**Blinding Concrete:** 1.2 kg/m<sup>2</sup> applied in slurry coat or dry powder consistency just before placing overlying concrete slab.

**Concrete Slabs:** Dry shake method as above or apply in one slurry coat of 1 kg/m<sup>2</sup>.

### Notes:

- Do not immerse in water retaining structures until 15 days old.
- Allow at least 48 hours to cure before subjecting to foot traffic.
- Protect against drying out.
- To fully activate the material may require 2-4 weeks.
- If high hydrostatic pressure is anticipated consult Cormix.

### PACKAGING

25 kg plastic lined paper bags.

### STORAGE & SHELF LIFE

Store in dry conditions out of sun. Shelf life up to 12 months. Shelf life may be shortened at high humidity or temperatures.

### HEALTH & SAFETY

**Contite Seal AC** is alkaline, use protective gloves, glasses and protect skin. If gets into eyes clean out with water immediately, wash off skin with soap and water immediately.

### 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

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