CORMIX®

Catalogues 2025

The Construction Chemicals Specialist

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2. Injection System • Cracks injection, water stopping foams, resins & gels	Epoxy Resins, Polyurethane Injection Foams, Resins & Gels, Soil Consolidation & Slab Lifting
3. Grouts • Very rapid strength gain, fire & chemical resistant, underwater anti washout, vibration resistance, cavity filling & rail embedment	Precision, Rapid Early Strength and High Flow Grouts, High Early Strength Epoxy Grout, General Purpose Grouts, Padding Mortar, Elastomeric Polyurethane Concrete
4. Concrete Repair & Protection • Epoxy adhesives, Concrete repair mortar, Structural Strengthening of Concrete & Corrosion Inhibitors	One Part Structural & Fairing Repair Mortar, Light Weight Overhead Mortars, Micro Concrete, Prebagged Shotcrete, Bonding Agents, Anchoring, Carbon Fibre & Rebar Coatings
5. Joint Sealants & Fillers • Joints sealing, joint waterproofing & accessories	Polysulphide, Bitumen Modified and Flexible Epoxy Joint Sealants, Backer Rods, Joint Fillers
6. Concrete Accessories	Mould Release Agents, Bond Breaker, Curing Compounds, Surface Retarders, Latex
7. Concrete & Shotcrete Admixtures	Superplasticizers, Plasticizers, Retarders, Waterproofers, Air Entrainers, Corrosion Inhibitors.
8. Underground Construction Specialties	Anchor Grout & Adhesive, Tunnel Grouting, Soil Conditioners, Soil Consolidation Gel, TBM Tail Grease, Mud Products - Ground Improvement

Product List

1 WATERPROOFING & PROTECTION

Cementitious Waterproofing

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Contite FCW
Contite FCWMCI
Contite Flex
Contite WS2

Waterproofing by Crystallization

Contite
Contite HHH
Contite Seal AC
Contite Seal Mortar
Cormix H2O Stop
Contite CFM

Waterproofing by Crystallization with Corrosion Inhibitors

Contite Seal ACCI
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Water Repellents

Contite Watershield

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Elastoclad
Elastoclad PU(N)
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Contite Waterbar CTG

2 INJECTION SYSTEMS

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Condur SCc
Contite PU100/101
Contite PUE200/201
Contite PUE300/301
Contite PUE400/E401
Contite PUE500/501
Contite PUE700/701
Contite G600

Soil Consolidation, Injection & Slab Lifting

Contite Soil Stab
Contite Slab Lift

Product List

3 GROUTING

Cementitious

Congrout GP
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Congrout RES
Congrout Padding Mortar
Congrout UWG
Congrout AF

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Condur EGLP2
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Condur UEG2

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Conpatch 600
Conpatch 600HS
Conpatch 600MCI
Conpatch 635
Conpatch 675
Conpatch MC
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Epoxy Based

Condur EA1
Condur EA1/SB
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Condur EM
Condur EF
Condur FC

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Condur FEA

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Congard Zinc
Congard ST

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Condur CF Adhesive
Condur CF Fabric
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Product List

5 JOINT SEALANTS & FILLERS

Joint Sealants & Fillers

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Conflex PS
Conflex PS(M)
Conflex Backer Rod
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6 CONCRETE ACCESSORIES

Curing Compound & Mould Oils

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Constrip 2
Constrip 4

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Constrip SRG
Constrip SRL
Constrip Bond Breaker

7 CONCRETE & SHOTCRETE ADMIXTURES

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Cormix R1 TP3
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Cormix SP1B
Cormix SP4

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Conair
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8 UNDERGROUND CONSTRUCTION SPECIALTIES

TBM Accessories

Cormix TBM TS1
Cormix TBM TS2
Cormix TBM P3
Cormix SCF
Cormix SCF1
Cormix SCF2
Cormix SCF3
Cormix P20
Cormix LA1

Product List

Hard Rock Tunneling (Shotcrete & Fixing)

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Cormix SP1B
Conplug
Congrout Rokfix
Congrout A
Contite PUE500/501
Contite PUE700/701
Contite Soil Stab

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Cormix SP1B
Cormix SP4
Cormix AFLRT1
Contite PU100/101
Contite PUE200/201
Contite PUE300/301
Contite PUE400/E401
Contite G600
Conpatch 600MCI
Contite Waterstop
Contite HPWM
Constrip SRG

Mud Products - Ground Improvement

Cormix Pilecon
Cormix Pilecon Super
Cormix SCP3
Cormix SCP4

CORMIX
One step ahead

(1)

Waterproofing and Protection

The Construction Chemicals Specialist

CORMIX
One step ahead

(1.1)

Cementitious Waterproofing

Conplug ®

Waterplug

DESCRIPTION

Conplug is a fast setting permanent waterplug. Ready to use mixed with water it becomes a powerful waterplug to stop pressure leaks.

USES & ADVANTAGES

Uses include to stop pressure and seepage leaks through concrete and rocks in: joints, culverts, basements, tunnels, dams, pools, subways etc.

Advantages include:-
- Contains no chloride.
- Easy to mix (add water).
- Permanent.
- Good adhesion.
- Non cracking. Almost no shrinkage.
- Rapid set.
- No corrosion.

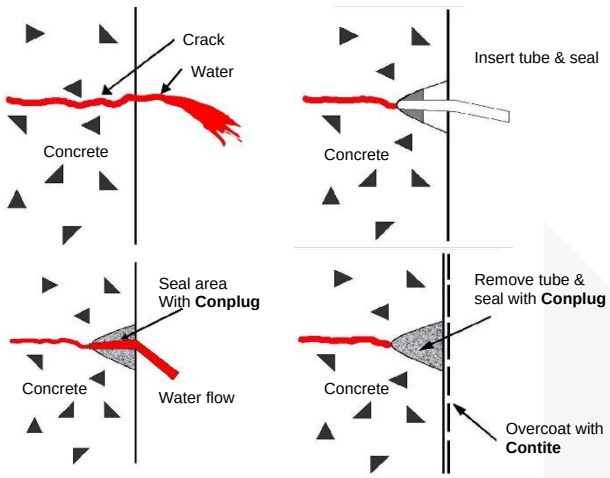
PROPERTIES

Appearance:	Grey powder
Bulk Density:	1.18
Fresh Wet Density:	1.99
pH Value of Paste:	9-11
Hardening Time:	30-60 seconds
Water Content:	25 % by weight of Conplug

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

APPLICATION

For Light Water Leak Just Plug with Conplug
Prepare concrete or rock in "V" shape around leak. Remove loose material, clean prior to application of **Conplug.**
Start filling from outside work toward centre of the leak.
The material should be held in place & leveled off.
If excessive water pressure is apparent use a wooden plug hammered home to stop the flow of water then cover and secure in position with **Conplug**.



Other admixtures, cements or sand should not be added to **Conplug**. Keep container sealed.

PACKAGING

5 kg tin & 25 kg plastic pail.

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 6 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Conplug is alkaline, use protective gloves. If gets into eyes clean out with water immediately. Mix in small quantities.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

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Contite ® FCW

HIGHLY FLEXIBLE CEMENTITIOUS WATERPROOFING MEMBRANE FOR HORIZONTAL & VERTICAL SURFACES

DESCRIPTION

A two part acrylic polymer modified highly flexible cementitious waterproof membrane supplied in kits ready to use for the protection of concrete and mortar. **Contite FCW** provides excellent adhesion, flexibility, crack bridging ability, and durability.

USES & ADVANTAGES

Contite FCW is suitable for many waterproofing applications including for swimming pools, wet areas, basements, reservoirs, tunnels, subways, cooling towers, water tanks and all below grade concrete structures etc.

Advantages include:-

- Crack bridging.
- Non toxic.
- Excellent adhesion. Fully bonded.
- Protection against carbonation and chlorides.
- Unlike conventional coatings that require the concrete to cure for 7 - 28 days it can be applied to 24 hours old concrete.
- Excellent elongation and flexibility.
- Increased frost & salt resistance.
- Easy to apply by trowel or brush.
- Minimum surface preparation needed.
- Excellent for damp-proofing basements below ground.
- Good chemical resistance to mild inorganic acid solution, diesel, gasoline, chlorides, deicing salts, organic solvents and effluents.
- Breathable - allows transmission of water vapour from interior of building.
- Over bridging of hairline cracks.
- Withstands light pedestrian traffic.

PROPERTIES

Appearance:	Grey & special colours on request
Polymer Characterization:	Polyacrylate styrene
Mixing Ratio:	A : B = 5 : 4.5 by weight
Density:	A + B (mixed) Approx. 1.5 kg/l.
Pot life:	30 minutes at 30°C. Pot life will be shortened at higher temperatures.
Initial Hardness Shore A: ASTM D2240	≥ 30
Tensile Strength: ASTM D-412	≥ 0.7 N/mm^2
Chloride Content:	0.008% ISEA Method
Adhesion to Substrate: ASTM D4541	≥ 0.8 N/mm^2
Drying Time:	3.00 to 4.00 hours depending on temperature
Flexibility Test:	No crack at 25 mm bending
Crack Bridging: ASTM C-836	No cracking at 2 mm width at full thickness No crack after 10 cycles of stretching and closing at 2 mm width
Elongation:	≥ 220% (2 mm. thickness)
Resistance to Water Penetration:	No water penetration DIN 1048 pt 5:1991

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

COVERAGE RATES

1.5 kg / coat / m^2 - 2 coats DFT approx. 2.00 mm.
Light Foot Traffic: 2 mm thickness in 2 coats
Moderate to Heavy Foot Traffic: 4 mm in 4 coats

SUBSTRATE PREPARATION

The substrate should be clean and sound, free of dust loose particles, grease, oil, primers from previous membrane systems or bitumen. Bitumen or primers should be removed by shotblasting or mechanical means, alternatively seal with a Cormix Sealer. Bond tests should be undertaken if the surface is already saturated with bitumen or bitumen primers.
Spalled concrete should be repaired by cutting out to sound concrete and patching with **Conpatch 600**.
Cracks, holes and honeycombs must be repaired prior to application (consult Cormix International Technical Department).
Areas at brick walls to receive waterproofing shall have brick joints evenly finished or skim-plastered while floor trap pipes shall be cut to the same level as the R.C. slab prior to waterproofing application.
At juncture or change of plane, between the slab and the wall, at corners and around pipe protrusion, a 25x25 mm cement mortar can't fillet shall be formed.

MIXING

Contite FCW is supplied in premeasured units. Slowly add the powder to the liquid and mix to a lump free smooth consistency.
Do not add water or rework a stiffened mix by adding water. Mix sufficient material to use within 30-40 minutes.

APPLICATION

At high temperatures protect material from direct sun and wind to prevent early drying & shrinkage cracks.
Concrete surface imperfections up to 2 mm. level with **Conpatch 300** above 2 mm. use **Conpatch 600**.
Construction joints should have **Contite Waterstop** installed and joints wall to parapet a fillet of **Conpatch 600** formed.
Static cracks should be routed out & repaired with **Conpatch 600** & covered with **Contite FCW** reinforced with **Elastoclothe** embedded into the first coat.
Smoothe out any wrinkles using a trowel. Cover with second coat.
Moving cracks should be filled with **Conflex PS** & a debond tape installed before over coating **with Contite FCW.**
Saturate the concrete's surface with clean water. Apply the first coat while the surface is still damp but no free-standing water.

Contite® FCW

HIGHLY FLEXIBLE CEMENTITIOUS WATERPROOFING MEMBRANE FOR HORIZONTAL & VERTICAL SURFACES

Apply using a short stiff bristle brush, rubber squeegee or roller at a rate of 1-2 mm. for walls and floors, depending on the expected water pressure.
The required thickness is achieved by applying 2 layers, taking care that each layer is not thicker than 1mm. Leave the first coat to dry for 3-4 hours before applying the second coat. The second coat can be rubbed down with a soft dry sponge. Spray or trowel application is acceptable providing the mixing ratio is adjusted to achieve the right consistency.
Leave the second coat of **Contite FCW** to cure overnight before proceeding to conduct water ponding test.
On hot surfaces e.g. above 40°C surface temperature a primer coat of mixed **Contite FCW** and water with a slurry consistency should be applied. Consideration to saturating the surface in advance and protection from adverse wind & sun conditons must be given in exposed areas. The **Contite FCW** must be applied over the primer coat before it dries. For light foot traffic areas the coating should be at least 2 mm thick. For advise contact Cormix Technical Service Department.

TIME TO EXPOSURE AFTER APPLICATION

Open to foot traffic after approx. 1 day. Application of tile mortar & tiles after approx. 1 day. Backfilling after approx. 5 days protect from damage if fill contains sharp material. Vertical surfaces may be exposed to rain after approx. 4 hours & horizontal surfaces after approx. 7 hours.
Hydrostatic pressure after 3-7 days at 23°C 60% humidity. Variations may occur due to climatic conditions such as temperature, humidity & substrate porosity.

CURING

Contite FCW should be protected from high wind & intense sunshine. Keep moist for 3 - 4 days after application. Protect from rain until fully hardened.

SUBSEQUENT FINISHES

Contite FCW is compatible with most forms of subsequent coatings. The material may be troweled over after 1 day or painted with a breathable solvent free paint (non-silicate) after 3 days. It is manufactured to use in conjunction with **Elastodeck** acrylic-coloured coatings from Cormix.

Important Notes
Not suitable for precast roofs.
Do not expose to water during setting.
Prolonged setting will be apparent if in high humidity. Mechanically damaged **Contite FCW** is easily repaired by cleaning the surface & reapplying material. Detailing must be undertaken at joints, penetrations, upstands and cracks.

Do not apply **Contite FCW** at temperatures below 5°C. At temperatures above 30°C **Contite FCW** can be applied once the concrete has reached 3 days old. If in doubt consult Cormix International Ltd.

COMPARISON BETWEEN CONTITE FCW FULLY BONDED LIQUID APP4LIED MEMBRANE & SHEET MEMBRANE

Features	Sheet Membrane	Contite FCW
• Membrane formation	In factory	At site
• Wait 28 days to apply	Yes	No
• Primer	Yes	No
• Apply to rough surface	No	Yes
• Lowers cost of waterproofing	No	Yes
• Cutting required	Yes	No
• Application / detailing easy	No	Yes
• Adhesion of toppings tile adhesive etc.	Poor	Excellent
• Seams / Joints	Yes	No
• Undercutting possible	Yes	No
• Fully bonded	No	Yes
• Crack bridging	Yes	Yes
• Salt resistance	Yes	Yes
• Carbonation resistance	Yes	Yes
• Protection boards / blocks required	Yes	No

CLEANING

Clean tools with water immediately after use.

PACKAGING

38 kgs set.
Part A liquid 20 kg plastic pails
Part B powder 18 kg bags.

STORAGE & SHELFLIFE

The shelf life is 12 months if unopened, stored free from frost, moisture and direct sunlight.

HEALTH & SAFETY

Contite FCW is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Contite FCW** is non-flammable. MSDS is available from Cormix.

Contite® FCW

HIGHLY FLEXIBLE CEMENTITIOUS WATERPROOFING MEMBRANE FOR HORIZONTAL & VERTICAL SURFACES

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.

Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.

The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.

Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advice offered.

CONTACT DETAILS

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Contite ® FCWMCI

FLEXIBLE CEMENTITIOUS WATERPROOFING MEMBRANE CONTAINING A MIGRATING CORROSION INHIBITOR

DESCRIPTION

A two part acrylic polymer modified flexible cementitious waterproof membrane containing a migrating corrosion inhibitor to protect reinforcement from corrosion. **Contite FCWMCI** provides excellent adhesion, flexibility, crack bridging ability, and durability.
Contite FCWMCI is developed with an integral corrosion inhibitor that migrates through the concrete to form a passive layer on the reinforcement providing additional protection from chlorides and other salts.
Contite FCWMCI is complies to EN 1504 Part 9 and EN 1504 Part 2

USES & ADVANTAGES

Contite FCWMCI is suitable for many waterproofing applications including for swimming pools, wet areas, basements, reservoirs, tunnels, subways, cooling towers, water tanks and all below grade concrete structures etc.
Advantages include:-

- Helps protect reinforcement from corrosion.
- Crack bridging.
- Non toxic.
- Excellent adhesion. Fully bonded.
- Protection against carbonation and chlorides.
- Unlike conventional coatings that require the concrete to cure for 7 - 28 days it can be applied to 24 hours old concrete.
- Suitable for use with steel fibre sprayed shotcrete.
- Double bond when sandwiched between concrete or shotcrete.
- Excellent elongation and flexibility.
- Increased frost & salt resistance.
- Easy to apply by trowel or brush.
- Minimum surface preparation needed.
- Good chemical resistance to mild inorganic acid solution, diesel, gasoline, chlorides, deicing salts, organic solvents and effluents.
- Breathable - allows transmission of water vapour from interior of building.
- Withstands light pedestrian traffic.
- Non ignitable

PROPERTIES

Appearance: Grey & special colours on request
Polymer Characterisation: Polyacrylate styrene
Mixing Ratio: A : B = 5 : 4.5 by weight
Density: A + B (mixed) Approx. 1.5 kg/l.
Pot life: 30 minutes at 30°C. Pot life will be shortened at higher temperatures.
Initial Hardness Shore A: ≥ 30
ASTM D2240
Tensile Strength: ≥ 0.7 N/mm^2
ASTM D-412
Chloride Content: 0.008% ISEA Method
Adhesion to Substrate: ≥ 0.8 N/mm^2
ASTM D4541
Drying Time: 3.00 to 4.00 hours depending on temperature
Flexibility Test: No crack at 25 mm bending
Crack Bridging: No cracking at 2 mm width
ASTM C-836 at full thickness
No crack after 10 cycles of stretching and closing at 2 mm width.
Elongation: > 220% (2 mm. thickness)
Resistance to Water Penetration: No water penetration
DIN 1048 pt 5:1991 and BS EN 12390-8 : 2000
** Properties are typical under laboratory conditions and do not constitute a specification. Field trials are recommended.*

COVERAGE RATES

1.5 kg / coat / m^2 - 2 coats DFT approx. 2.00 mm.
Light Foot Traffic: 2 mm thickness in 2 coats
Moderate to Heavy Foot Traffic: 4 mm thickness in 4 coats.

SUBSTRATE PREPARATION

The substrate should be clean and sound, free of dust loose particles, grease, oil, primers from previous membrane systems or bitumen. Spalled concrete should be repaired by cutting out to sound concrete and patching with **Conpatch 600 series.** Cracks, holes and honeycombs must be repaired prior to application (consult Cormix International Technical Department).

Areas at brick walls to receive waterproofing shall have brick joints evenly finished or skim-plastered while floor trap pipes shall be cut to the same level as the R.C. slab prior to waterproofing application.

At juncture or change of plane, between the slab and the wall, at corners and around pipe protrusion, a 25x25 mm cement mortar can't fillet shall be formed.

MIXING

Contite FCWMCI is supplied in premeasured units. Slowly add the powder to the liquid and mix to a lump free smooth consistency.
Do not add water or rework a stiffened mix by adding water. Mix sufficient material to use within 30-40 minutes.

APPLICATION

At high temperatures protect material from direct sun and wind to prevent early drying & shrinkage cracks. Concrete surface imperfections up to 2 mm. level with **Conpatch 300** above 2 mm. use **Conpatch 600 series**. Construction joints should have **Contite Waterstop** installed and joints wall to parapet a fillet of **Conpatch 600 series** formed.
Static cracks should be routed out & repaired with **Conpatch 600 series** & covered with **Contite FCWMCI** reinforced with **Elastoclothe** embedded into the first coat. Smoothe out any wrinkles using a trowel. Cover with second coat. Moving cracks should be filled with **Conflex PS** & a debond tape installed before over coating with **Contite FCWMCI**.

Contite® FCWMCI

FLEXIBLE CEMENTITIOUS WATERPROOFING MEMBRANE CONTAINING A MIGRATING CORROSION INHIBITOR

Saturate the concrete's surface with clean water. Apply the first coat while the surface is still damp but No free standing water. Apply using a short stiff bristle brush, rubber squeegee, roller or spray. The required thickness is achieved by applying 2 layers, taking care that each layer is not thicker than 1mm. Leave the first coat to dry for 3-4 hours before applying the second coat. The second coat can be rubbed down with a soft dry sponge.
Spray or trowel application is acceptable providing the mixing ratio is adjusted to achieve the right consistency. Leave the second coat of **Contite FCWMCI** to cure overnight before proceeding to conduct water ponding test.
On hot surfaces e.g. above 40ºC surface temperature a primer coat of mixed **Contite FCWMCI** and water with a slurry consistency should be applied. Consideration to saturating the surface in advance and protection from adverse wind & sun conditions must be given in exposed areas. The **Contite FCWMCI** must be applied over the primer coat before it dries. For light foot traffic areas the coating should be at least 2 mm thick. For advise contact Cormix Technical Service Department.

TIME TO EXPOSURE AFTER APPLICATION

Open to foot traffic after approx. 1 day. Application of tile mortar & tiles after approx. 1 day. Backfilling after approx. 5 days protect from damage if fill contains sharp material. Vertical surfaces may be exposed to rain after approx. 4 hours & horizontal surfaces after approx. 7 hours.
Hydrostatic pressure after 3-7 days at 23ºC 60% humidity. Variations may occur due to climatic conditions such as temperature, humidity & substrate porosity.

CURING

Contite FCWMCI should be protected from high wind & intense sunshine. Keep moist for 3 - 4 days after application. Protect from rain until fully hardened.

SUBSEQUENT FINISHES

Contite FCWMCI is compatible with most forms of subsequent coatings. The material may be troweled over after 1 day or painted with a breathable solvent free paint (non silicate) after 3 days. It is manufactured to use in conjunction with **Elastodeck** acrylic coloured coatings from Cormix.

Important Notes
Not suitable for precast roofs.
Do not expose to water during setting.
Prolonged setting will be apparent if in high humidity.
Mechanically damaged **Contite FCWMCI** is easily repaired by cleaning the surface & reapplying material.
Detailing must be undertaken at joints, penetrations, upstands and cracks.
Do not apply **Contite FCWMCI** at temperatures below 5ºC. At temperatures above 30ºC **Contite FCWMCI** can be applied once the concrete has reached 3 days old. If in doubt consult Cormix International Ltd.

CLEANING

Clean tools with water immediately after use.

PACKAGING

38 kgs set.
Part A liquid 20 kg plastic pails; Part B powder 18 kg bags.

STORAGE & SHELFLIFE

The shelf life is 12 months if unopened, stored free from frost, moisture and direct sunlight.

HEALTH & SAFETY

Contite FCWMCI is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Contite FCWMCI** is non-flammable. MSDS is available from Cormix.

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

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Contite ® Flex

FLEXIBLE POLYMER MODIFIED CEMENTITIOUS WATERPROOFING SLURRY

DESCRIPTION

Contite Flex is a two part polymer modified flexible waterproofing slurry consisting of a liquid polymer as Part A and a premixed powder as Part B. On mixing the two parts together a brush or sprayable smooth slurry is created which produces a fully bonded waterproof membrane to most substrates.

Contite Flex is complies to EN 1504 Part 9 and EN 1504 Part 2

USES & ADVANTAGES

Contite Flex may be used for many waterproofing applications including applying to concrete, masonry, brick, renders, gypsum board and cementitious overlays, under tiles or stand alone. Typical applications include waterproofing of water tanks, reservoirs, sumps, swimming pools, bathrooms, basements, retaining walls, concrete gutter, balconies, kitchens, sewerage processing tanks, lift pits.

Advantages Include:-

- Flexible with good elongation.
- Minor crack bridging (upto 2 mm) when applied at correct coverage rates.
- Suitable for use in exposed conditions.
- Non toxic. Suitable for use with potable water.
- High resistance to chloride diffusion.
- Fully bonded. No priming required in most cases.
- Breathable, not a vapour barrier.
- Can apply to damp surfaces.
- Can apply to negative or positive side.
- Stands up to pedestrian & light traffic.
- Excellent root resistance.
- Withstands > 100 m. head of water at recommended coverage rates.
- Barrier to Carbon Dioxide.
- Resistant to aggressive salt bearing waters.

PROPERTIES

Appearance:	Grey (when mixed)
Mixing Ratio:	A : B = 1 : 2.3
Density:	A + B (mixed) Approx. 1.6 kg/l
Coverage:	Approx. 1.6 kg/m^2/mm.
Pot life:	30 minutes at 30ºC. Pot life will be shortened at higher temperatures.
Elongation:	> 100%
Adhesion to Substrate:	> 0.7 N/mm^2
Tensile Strength:	> 0.7 N/mm^2
Shore A Hardness:	> 50
Application Temperature:	> 5ºC
Contact with Potable Water:	Suitable
Resistance to Water Penetration:	No water penetration DIN 1048 pt 5:1991
ISAT :	< 0.05 ml/m^2.s
Rapid Chloride Diffusion:	< 300 coulombs

SURFACE PREPARATION

The substrate should be clean and sound, free of dust loose particles, grease, oil, curing compounds, mould oils, primers from previous membrane systems or bitumen.
Bitumen or primers should be removed by shotblasting or mechanical means, alternatively seal with a Cormix Sealer. Bond tests should be undertaken if the surface is already saturated with bitumen or bitumen primers. Spalled concrete should be repaired by cutting out to sound concrete and patching with **Conpatch 600** (consult Cormix International Technical Department).
Best surface preparation is achieved by high pressure water blasting.

MIXING

Contite Flex is supplied in premeasured units. Slowly add the powder to the liquid and mix to a lump free smooth consistency. Do not add water or rework a stiffened mix by adding water. Mix sufficient material to use within 30-40 minutes.

APPLICATION

Saturate the concrete's surface with clean water. Apply the first coat while the surface is still damp but no free standing water. Apply using a short stiff bristle brush, trowel or spray at a minimum of 0.5-1.0 mm per coat.
Leave to dry for 2-6 hours. The second coat is applied to the "green" first coat. The second coat can be rubbed down with a soft dry sponge. Spray or trowel application is acceptable providing the mixing ratio is adjusted to achieve the right consistency. When applying by spray hold the gun approximately 50 cm. from the surface. Once the first coat is applied by spray, brush or trowel then wet surface to remove any trapped air.
Spray application will produce a very smooth surface if other products will be applied over the top roughen the surface by brushing while it is still wet.
The cure time of **Contite Flex** is affected by both temperature and humidity. Humidity has an influence on waiting times between coats and resistance to rain. Ensure that the freshly applied **Contite Flex** is protected from rain for the first day, and the drying effect of the sun and wind during the first 5 days of cure.
On hot surfaces e.g. above 40ºC surface temperature a primer coat of mixed **Contite Flex** and water with a slurry consistency should be applied. Consideration to saturating the surface in advance and protection from adverse wind & sun conditions must be given in exposed areas. The **Contite Flex** must be applied over the primer coat before it dries. For light foot traffic areas the coating should be at least 2 mm thick. For advise contact Cormix Technical Service Department.
Note : Mix only complete packs.

Contite ® Flex

FLEXIBLE POLYMER MODIFIED CEMENTITIOUS WATERPROOFING SLURRY

APPLICATION RATES

In most waterproofing applications, **Contite Flex** is applied in 2 coats by brush, trowel or spray. The minimum application rates are as follows;

Ground water ingress - 2 coats by brush, trowel or spray at 1.6 kg/m^2/coat. (Minimum layer thickness for 2 coats 2.0 mm.)

Pressure less ingress - 2 coats by brush, trowel or spray at 1.6 kg/m^2/coat. (Total minimum layer thickness for 2 coats 2.0 mm.)

Water under pressure - 2 coats by brush, trowel or spray at 2.0 kg/m^2/coat. (Total minimum layer thickness for 2 coats 2.5 mm.)

Bathroom waterproofing - 2 coats by brush at 1.6 kg/m^2/coat. (Minimum layer thickness for 2 coats 2.0 mm.)

Swimming pools - 2 coats by brush or spray application at 1.6 kg/m^2/coat. (Minimum 2 mm. thickness)

CURING & PROTECTION

Surfaces waterproofed with **Contite Flex** must be protected from rain, ponded water and the drying action of direct sunlight for a minimum period of 5 days after application.

Protect all treated surfaces from wind, frost, rain and water seepage by covering with plastic sheeting, tarpaulin or equivalent.

CLEANING

Tools and equipment should be cleaned with water immediately after use.

LIMITATIONS

Contite Flex is suitable for use in open headed sewerage processing tanks. Consult Cormix International Ltd. for specific advise on the use of products to use in closed sewerage environments where sulphuric acid concentrations may be high. In negative side applications, do not apply **Contite Flex** to substrates that are weeping.
Use Contite waterplug to stop all water seepage before applying **Contite Flex**.

PACKAGING

33 kgs set; Part A liquid 10 kgs and Part B powder 23 kgs.

STORAGE & SHELF LIFE

In excess of 9 months if unopened, stored free from frost, moisture and direct sunlight.

HEALTH & SAFETY

Contite Flex is non-toxic but is alkaline in its nature.

When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Contite Flex** is non-flammable.

TECHNICAL SERVICE

The Cormix International Limited 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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data. The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Contite ® WS2

A TWO PART CEMENTITIOUS WATERPROOFING MEMBRANE FOR CONCRETE & MORTAR SURFACES

DESCRIPTION

A two part acrylic polymer modified cementitious waterproof coating supplied in kits ready to use for the protection of concrete and mortar. **Contite WS2** provides excellent adhesion and durability. **Contite WS2** complies with the requirements of EN 1504 Part 9 and EN 1504 Part 2 as protective coating.

USES & ADVANTAGES

Contite WS2 is suitable for many waterproofing applications including for sealing swimming pools, balconies, bathrooms, wet areas, tanks and basements.

Advantages Include:-

- Minor / micro crack bridging & sealing.
- Non toxic.
- Excellent adhesion.
- Protection against carbonation and chlorides.
- Unlike conventional coatings that require the concrete to cure for 7 - 28 days it can be applied to 24 hours old concrete.
- Increased frost & salt resistance.
- Easy to apply.
- Minimum surface preparation needed.
- Excellent for damp-proofing basements below ground.
- Breathable - allows transmission of water vapour from interior of building.

Contite WS2 can be used for concrete protection. in particular it is:

- ✓ Suitable for protection against ingress (Principle 1, method 1.3 of EN 1504-9),
- ✓ Suitable for moisture control (Principle 2, method 2.2 of EN 1504-9)
- ✓ Suitable for increasing the resistivity (Principle 8, method 8.2 of EN 1504-9)

PROPERTIES

Component: Two Part
(Part A - Polymer /Part B - Powder)
Appearance: Grey (when mixed)
Mixed Density: 2.00 ± 0.05 kg/l.
Pot life: 30 minutes at 30ºC.
Pot life will be shortened at higher temperatures
Tensile Strength: ≥ 0.5 N/mm^2
ASTM D412/DIN53455
Adhesion to Concrete: ≥ 0.5 MPa
ASTM D4541
Application Temperature: +5ºC to +40ºC
Mixing Ratio: A : B = 1 : 4 by weight
Coverage: Approx. 2 kg/m^2/coat
at 1 mm thickness, apply 2 coats

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

MIXING

Contite WS2 is supplied in premeasured units. Slowly add the powder to the liquid and mix to a lump free smooth consistency. Do not add water or rework a stiffened mix by adding water. Mix sufficient material to use within 30-40 minutes.

SUBSTRATE PREPARATION

The substrate should be clean and sound, free of dust loose particles, grease, oil, primers from previous membrane systems or bitumen. Bitumen or primers should be removed by shotblasting or mechanical means, alternatively seal with a Cormix Sealer. Bond tests should be undertaken if the surface is already saturated with bitumen or bitumen primers. Spalled concrete should be repaired by cutting out to sound concrete and patching with **Conpatch 600** (consult Cormix International Technical Department).

APPLICATION

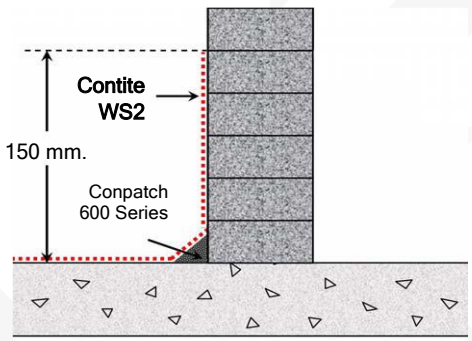
Saturate the concrete's surface with clean water. Apply the first coat while the surface is still damp but no free standing water. Apply using a short stiff bristle brush or roller at a minimum of 1.0 mm per coat. Leave to dry for 2-6 hours. The second coat can be rubbed down with a soft dry sponge. Spray or trowel application is acceptable providing the mixing ratio is adjusted to achieve the right consistency.

PRECAUTIONS

Pull off tests should be undertaken with non-standard surfaces and to check bond of tile adhesive to **Contite WS2**. On hot surfaces e.g. above 40ºC surface temperature a primer coat of mixed **Contite WS2** and water with a slurry consistency should be applied. Consideration to saturating the surface in advance and protection from adverse wind & sun conditions must be given in exposed areas. The **Contite WS2** must be applied over the primer coat before it dries. For light foot traffic areas the coating should be at least 2 mm thick. For advice contact Cormix Technical Service Department.

DETAILING

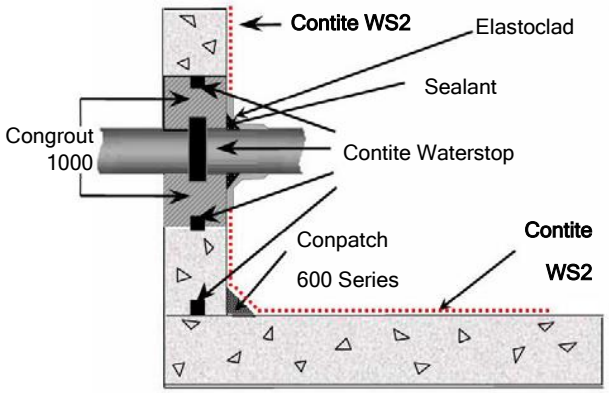
Wall to Floor Joint Detail - Blocks, Bricks or Concrete



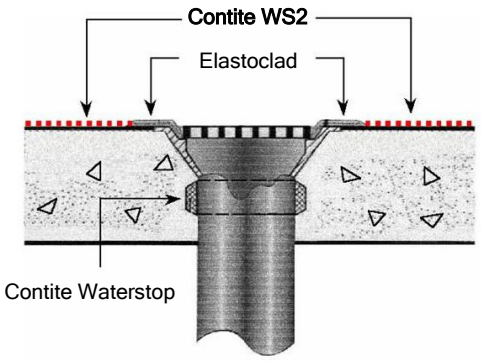
Contite ® WS2

A TWO PART CEMENTITIOUS WATERPROOFING MEMBRANE FOR CONCRETE & MORTAR SURFACES

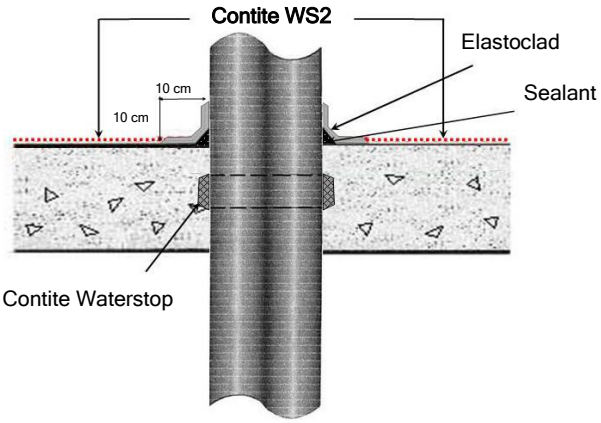
Construction/Cold Joint & Pipe Penetration Detail



Drain Detail



Penetration Detail



CURING

Contite WS2 should be protected from high wind & intense sunshine. Keep moist for 3 - 4 days after application. Protect from rain until fully hardened.

SUBSEQUENT FINISHES

Contite WS2 is compatible with most forms of sub-sequent coatings.

COVERAGE RATES

2 kg/m^2/coat. @1 mm thickness. Apply 2 coats. Actual coverage depends upon porosity & texture of the substrate.

CLEANING

Clean tools with water before material hardens.

PACKAGING

25 kgs set.
Part A liquid 5 kg plastic pails; Part B powder 20 kg bags.

STORAGE & SHELFLIFE

In excess of 9 months if unopened, stored free from frost, moisture and direct sunlight.

HEALTH & SAFETY

Contite WS2 is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Contite WS2** is non-flammable.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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CORMIX
One step ahead

(1.2)

Waterproofing by Crystallization

Contite ®

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, water and certain chemical solutions.

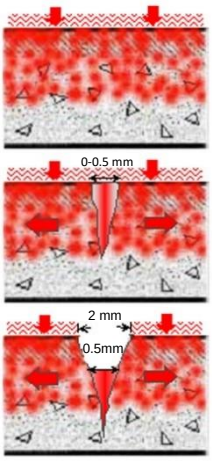
Complies to EN1504 Part 9 and EN1504 Part 2
- Principle 1 : Protection Against Ingress (PI). Method 1.2 - Impregnation.
- Principle 2 : Moisture Control. (MC) Method 2.2 - Impregnation.
- Principle 5 : Increase in Physical Resistance (IR). Method 5.2 - Impregnation.
- Principle 6 : Resistance to Chemicals (RC). Method 6.2 - Impregnation.
- Principle 8 : Increasing Resistivity (IR). Method 8.2 - Impregnation.

USES & ADVANTAGES

Contite can be used to protect various concrete structures including marine and coastal structures, water storage tanks, highways, runways, 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.
- 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.

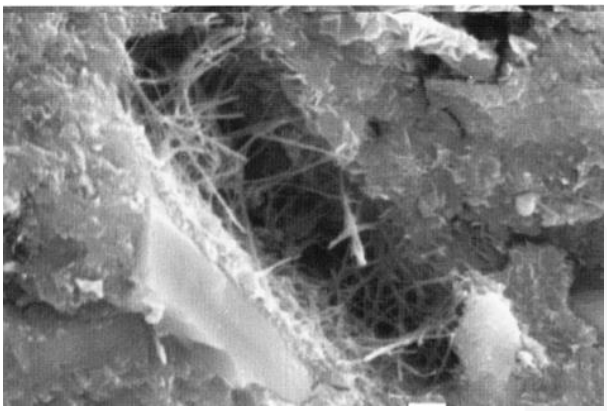
How Contite Seals Concrete & Cracks (Not to Scale)

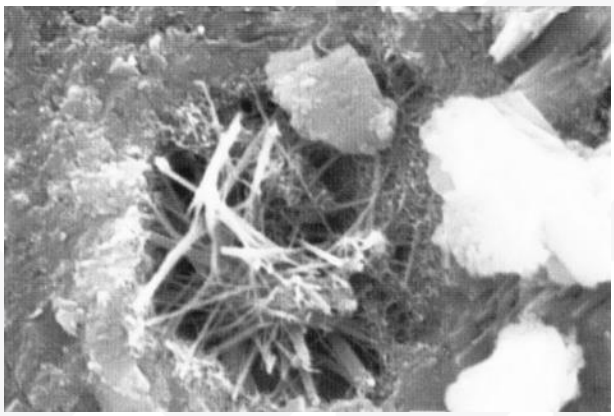


Contite penetration is determined by concrete grade & porosity

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

Contite ®

LIQUID CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION SYSTEM

STANDARDS

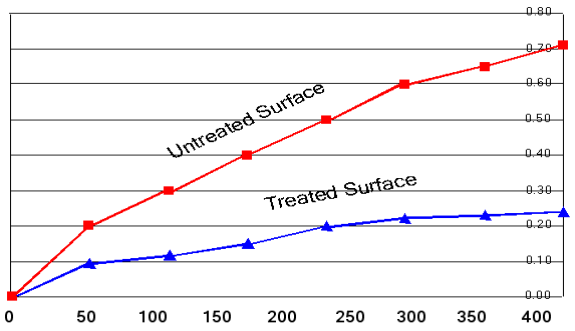
Conforms to:

- BS EN 12390-8:2009 - Testing Hardened Concrete: Depth of Penetration of Water Under Pressure. Depth of Water penetration @ 5 bar water pressure for 72 hrs - Max 80% of Control.
- Complies to Chloride Ion Penetration: ASTM C1202 - Less than Control.
- Crystal growth depth in the Concrete by SEM - TISTR lab.
- Standard Test method for examination of Water & Waste Water -APHA,AWWA- SGS lab

PROPERTIES AND COMPLIANCE

Appearance:	Transparent Liquid
Specific Gravity:	1.22 ± 0.02 kg/ltr
Toxicity:	Non Toxic Tested by SGS
pH:	11-12
Drying Time:	min. 2 hrs
Recoat Time:	5-6 hrs
Paintability:	Excellent
% Non Volatile Content:	Approx. 28 + 2%
Explosion Hazard:	None
Flash Point:	None

Relationship of water absorption as function of time.



Contite treated concrete shows dramatic reduction of water absorption over plain concrete (AIT 2002)

COVERAGE RATES

5 m^2 / 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 nontoxic 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 PS** polysulphine joint sealant. Design detailing is important, **Contite** seals cracks, capillaries and pores in concrete. It does not seal major honeycombs, voids or large structural cracks.

APPLICATION & SURFACE PREPARATION

- It is desireable 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 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.**

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

A back pack spray will achieve 100-150 m^2 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.

Contite ®

LIQUID CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION SYSTEM

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 m^2 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 e.g. 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.

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: 2015 verified by TUV Nord.
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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 those 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.

Contite® HHH

A TRIPLE MECHANISM LIQUID CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION SYSTEM

DESCRIPTION

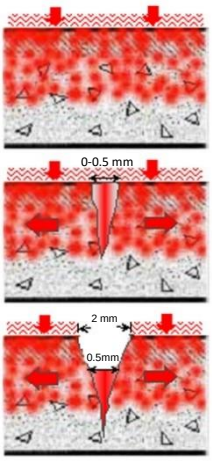
Contite HHH is a triple mechanism, unique opaque sealing and waterproofing subsurface membrane which is solvent free, non-toxic, odourless and eco-friendly. The triple mechanism effect of hydrophilic, hydrophobic and hygroscopic properties provide durable protection to the concrete against water borne chemicals, freeze thaw and other attack. 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 HHH** remains active and will seal hairline cracks both present and future. **Contite HHH** 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, water and certain chemical solutions.

Complies to EN1504 Part 9 and EN1504 Part 2
- Principle 1 : Protection Against Ingress (PI).
  Method 1.1 – Hydrophobic Impregnation.
  Method 1.2 – Impregnation.
- Principle 2 : Moisture Control. (MC)
  Method 2.1 – Hydrophobic Impregnation.
  Method 2.2 – Impregnation.
- Principle 5 : Increase in Physical Resistance (PR).
  Method 5.2 – Impregnation.
- Principle 6 : Resistance to Chemicals (RC).
  Method 6.2 – Impregnation.
- Principle 8 : Increasing Resistivity (IR).
  Method 8.1 – Hydrophobic Impregnation.
  Method 8.2 – Impregnation.

USES & ADVANTAGES

Contite HHH can be used to protect various concrete structures including marine and coastal structures, water storage tanks, highways, runways, bridges, cut & cover tunnels, silos, car parks, swimming pools, precast panels, pipes, etc. Unlike solvent-based, membrane forming sealers **Contite HHH** is environmentally friendly.
Since **Contite HHH** penetrates into the concrete, it won't scratch, peel or damage.
Advantages include:-
- Reduces porosity & permeability.
- 100% Trafficable. Slip resistance improved.
- 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.
- Provides water repellency.
- Cracks developing on treated surfaces may be sealed avoiding leakage through the slabs.
- Nontoxic, 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 up to 0.5 mm. 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 HHH Seals Concrete & Cracks (Not to Scale)



Contite HHH penetration is determined by concrete grade & porosity

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

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

STANDARDS

- Complies to Chloride Ion Penetration: ASTM C1202 - Less than Control.
- BS EN 12390-8:2009 - Testing Hardened Concrete: Depth of Penetration of Water Under Pressure. Depth of Water penetration @ 5 bar water pressure for 72 hrs - Max 80% of Control.
- Crystal growth depth in the Concrete by SEM - TISTR lab.
- Standard Test method for examination of Water & Waste Water -APHA, AWWA- SGS lab.

Contite® HHH

A TRIPLE MECHANISM LIQUID CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION SYSTEM

PROPERTIES AND COMPLIANCE

Appearance:	Turbid Liquid
Specific Gravity:	1.15 - 1.25 kg/ltr
Toxicity:	Non Toxic Tested by SGS
pH:	11-13
Drying Time:	min. 2 hrs
Recoat Time:	5-6 hrs
Paintability:	Excellent
Explosion Hazard:	None
Flash Point:	None

Triple Mechanism of Contite HHH

Hydrophobic ➡ provides water repellency to the substrate.

Hydrophilic ➡ provides water absorption for crystal growth.

Hygroscopic ➡ absorbs moisture form air in the form of water vapour and uses it for crystal growth formation.

COVERAGE RATES

5 m^2 / 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. It shall be a triple action subsurface waterproofing membrane that shall impart hydrophilic and hydrophobic properties.

The material shall be nontoxic 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, water blasting 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 PS** polysulphide joint sealant. Design detailing is important, **Contite HHH** seals cracks, capillaries and pores in concrete. It does not seal major honeycombs, voids or large structural cracks.

APPLICATION & SURFACE PREPARATION

- It is desireable to apply **Contite HHH** 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 HHH** 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 HHH** 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 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 HHH.**

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

A back pack spray will achieve 100-150 m^2 per hour.

Eye protection should be used when spraying.

Contite HHH 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 HHH** 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 HHH should not be applied at temperatures below 5ºC (in high temperatures apply in the morning or late afternoon) if it is about to rain or in high wind conditions. At low temperatures stir well before use.

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.

Contite® HHH

A TRIPLE MECHANISM LIQUID CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION SYSTEM

Equipment:
Use simple hand spraying knapsack for small areas or motorized sprayers for large areas. A simple knapsack spray can achieve 100-150 m^2 per hour.

IMPORTANT NOTES AND LIMITATIONS

Contite HHH should not come into contact with glass. Paint in general will not be effected by **Contite HHH**, however, if
Contite HHH comes into contact with paintwork remove with water. Before applying **Contite HHH** where tiles or other material may come into contact with **Contite HHH** consult Cormix's technical department.
Contite HHH is not designed to be highly resistant to strong acid or alkali attack. It provides water repellency. The ability of **Contite HHH** 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 HHH** must be clean and free of all oils and grease. If floor hardening is the main consideration use **Contop S**.
Contite HHH should not be used on the negative side of structures which are continuously damp. Consult with Cormix if to be used with pigmented concrete.
Detailing is important e.g. 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 HHH** 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, especially at low temperatures. **Do not apply below 5ºC**

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.

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data. The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

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Contite ® Seal AC

CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION NO CURING

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 tracts of 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 tracts 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.

Contite Seal AC is also available with an anti-freeze additive incorporated for applications during winter season at low temperatures.

Complies to EN1504 Part 9 and EN1504 Part 2

- Principle 1 : Protection Against Ingress (PI).
  Method 1.3 – Surface Coating.
- Principle 2 : Moisture Control. (MC)
  Method 2.3 – Surface Coating.
- Principle 5 : Increase in Physical Resistance (PR).
  Method 5.1 – Overlays or Coatings.
- Principle 6 : Resistance to Chemicals (RC).
  Method 6.1 – Overlays or Coatings.
- Principle 8 : Increasing Resistivity (IR).
  Method 8.3 – Overlays or Coatings.

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, water tanks 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 replacement for the hazardous and tedious method of installing preformed sheet membrane systems for basement waterproofing.

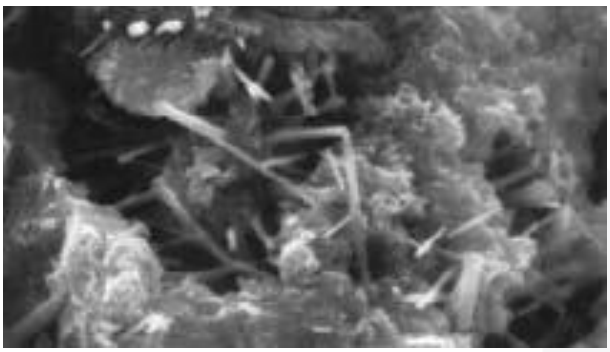
Advantages include:-

- Air curing system. No water curing or polythene sheet covering required after application.
- Forms subsurface membrane.
- Can be used as final topcoat or finish coat.
- Apply by brush, roller or spray.
- Can penetrate deep 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 tanks.
- No solvents. No harmful vapours.
- Can apply to green or moist concrete.
- Eco friendly green product.
- Fast tracks projects.
- Becomes an integral (internal) part of the concrete and is permanent.
- 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 membrane 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.
- Compatible with SCC and concrete containing PFA and other pozzolanic materials.

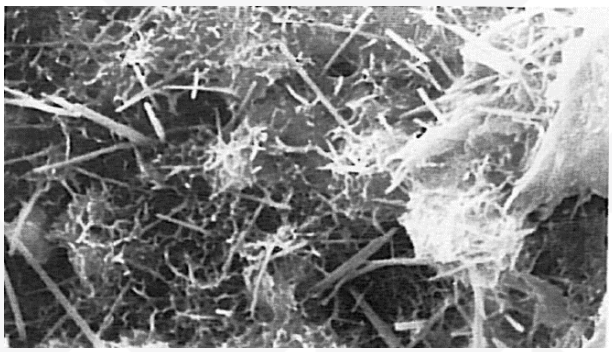
PROPERTIES AND COMPLIANCE

Component :	Single
Form:	Fine Grey powder
Fresh Wet Density:	Approx. 1.90 kg/ltr
Chloride Content:	Nil
Water Permeability:	Conforms to BSEN 12390
Toxicity:	Non toxic BS 6920-1 : 2000. Tested by SGS
Chemical Resistance:	Tested to ASTM C-267-77 resists chemicals in pH range 3-11.
Yield:	16.5 ltr/25 kg bag

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



Crystal growth in concrete after application at 7 days.



Fully developed crystal growth at 28 days within the capillary tracts of concrete blocking flow of water.

Contite ® Seal AC

CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION NO CURING

STANDARDS

Conforms to:

- BS EN 12390-8:2009 - Testing Hardened Concrete: Depth of Penetration of Water Under Pressure. Depth of Water penetration @ 5 bar water pressure for 72 hrs – Max 80% of Control.
- Crystal growth depth in the Concrete by SEM – TISTR lab.
- Standard Test method for examination of Water & Waste Water –APHA, AWWA-SGS lab.

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 water blasted. 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.

MIXING

Mix one 25 kg bag with 7.5 - 8.0 litres of clean potable water. During very hot and humid conditions chilled water may be used. 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 METHOD

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.

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^2 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.

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^2. If delays in pouring concrete keep **Contite Seal AC** moist by mist/fog spraying water.

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 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^2. 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.

CURING

Curing is not required. This is an air curing product. During hot and humid conditions to avoid fast water loss, the coating may be protected by using polythene sheet held tightly to the surface for 24 hours 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, water 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.

Contite ® Seal AC

CONCRETE PROTECTION & WATERPROOFING BY CRYSTALLIZATION NO CURING

CONSUMPTION RATES

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 40ºF (4ºC). 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 0.8-1 kg/m^2.
If in doubt consult Cormix International Technical Service. The following is a guide to material consumption.
Dry Shake Method: 1.6 kg/m^2 before final troweling work.
Backfilled Concrete Surfaces, Internal Walls & Water Retaining Structures: 2 coats applied at 0.75 kg/m^2 per coat by brush or spray or 1 coat at 1 kg/m^2.
Backfilled Concrete Surfaces with Hydrostatic Pressure: 2 coats at 0.75-1 kg/m^2/coat or one coat at 1 kg/m^2. If high hydrostatic pressure is anticipated consult Cormix.
Construction Joints: 1.5 kg/m^2 applied in slurry coat or dry powder consistency just before pouring concrete.
Blinding Concrete: 1.2 kg/m^2 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^2.

LIMITATIONS

- Do not apply to dry surfaces.
- If high hydrostatic pressure is anticipated consult Cormix.
- Protect against drying out.
- Do not immerse in water retaining structures until 12 days old.
- Allow at least 48 hours to cure before subjecting to foot traffic.
- To fully activate the material may require 2-4 weeks.

PACKAGING

Contite Seal AC is supplied in 25 kg plastic lined paper bags or 25 kg plastic pail.

STORAGE & SHELF LIFE

Store in dry conditions out of sun. Shelf life up to 12 months stored properly in original unopened packaging. 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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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CONTACT DETAILS

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Contite ® Seal Mortar

A CEMENTITIOUS READY TO USE WATERPROOF REPAIR AND SEALING MORTAR

DESCRIPTION

Contite Seal Mortar is a crystal forming cementitious ready to use waterproof mortar for repairing & sealing concrete. Calcium silicate gel is formed as the chemicals in the mortar react with calcium hydroxide and moisture to seal construction joints and shrinkage cracks. It is used usually in conjunction with **Contite Seal** waterproofing by crystallization.

USES & ADVANTAGES

Uses include filling of reglets at joints & coves, filling of tie holes, patching construction joints, filling of routed out cracks and repairing of minor spalled & honeycombed sections of concrete.

Advantages include:-

- Can apply to damp / moist concrete.
- May be applied to positive or negative side of structure.
- Easy mixing & installation.
- Allows concrete to breathe.
- Non toxic or flammable. Zero V.O.C$_s$.
- Unaffected by freeze thaw.
- Will seal shrinkage cracks upto 0.5 mm.
- Environmentally friendly.
- Safe for contact with potable water.

PROPERTIES AND COMPLIANCE

Appearance:	Light Grey powder
Pot Life:	25-40 minutes depending on weather conditions
Setting Time:	Approx. 2 hours depending on weather conditions
Specific Gravity:	Approx. 2.25 kg/litre.
Compressive Strength:	45-50 N/mm^2 at 28 days

Properties are values achieved under laboratory conditions. Temperatures, humidity, site conditions & mix ratios may influence these values.

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

SUBSTRATE PREPARATION

Surfaces to be treated with **Contite Seal Mortar** must be sound. Remove all dirt, loose debris, laitance, curing compounds, mould oils, grease, paints or other materials that will interfere with the penetration of **Contite Seal Mortar** chemicals. The surface once sound should be saturated with water ideally by low pressure water blasting to remove any remaining contaminants & drive moisture into the concrete. The surface must be damp when applying the material. All areas to be treated should be roughened, honeycombs & spalls shall be cut out to sound concrete, tie holes roughened & cracks routed out into a U-shape at least 20 mm. wide & 20 mm. deep.

MIXING

Add 14% water by weight of **Contite Seal Mortar** to achieve a trowelable mortar consistency.
Only enough material should be mixed that can be consumed within 30 minutes.

INSTALLATION

<u>Honey combs, spalls etc.</u>

Having prepared a sound surface & saturated it apply **Contite Seal** prime slurry coat at 1 kg/ m^2 whilst still green apply **Contite Seal Mortar** in layers up to the fill depth of the repair. The maximum layer should be 10-14 mm. leave a scratched surface to receive the following layer and ensure the surface is pre saturated with water before the next layer is applied.

<u>Reglets & routed out cracks</u>

After sound and saturated concrete has been achieved apply **Contite Seal** slurry at 1kg/ m^2 over the surface or approx. 0.5 mm. thick. Whilst still green install the dry pack mortar in U-shape reglets hammer home with a piece of wood to achieve a sound dense dry pack.
Apply **Contite Seal** slurry over the repaired areas as soon as the mortar has set (normally <2 hours depending on weather conditions). All areas must be saturated with water. The surface of the repairs should be left rough to receive the **Contite Seal** slurry.

<u>Notes/Limitations</u>

- Do not apply **Contite Seal Mortar** at temperatures below 5^{o}C or to substrates that are frozen. Very high temperatures may reduce the setting time.
- **Contite Seal Mortar** is not to be used in expansion joints. Leaking construction joints may be repaired with **Contite Seal Mortar** in conjunction with other materials.
  DO NOT use in moving joints.

CURING

Protect from extreme weather conditions. Cure with water by mist curing 3-4 times per day for 2 days.

CONSUMPTION RATES

U-shaped cracks 25x25 mm	Approx. 1.3-1.5 kg/lm.
Reglets 25x25 mm	Approx. 1.3-1.5 kg/lm.
Patches	Approx. 2.25 kg/mm/m^2

PACKAGING

25 kg plastic lined paper bags.

STORAGE & SHELF LIFE

Store in dry conditions out of sun.
Shelf life up to 12 months when stored correctly in original unopened containers. Shelf life may be shortened if high humidity or temperatures exist.

Contite ® Seal Mortar

A CEMENTITIOUS READY TO USE WATERPROOF REPAIR AND SEALING MORTAR

HEALTH & SAFETY

Contite Seal Mortar 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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Cormix ® H_2O Stop

LIQUID AND POWDER FORM INTEGRAL WATERPROOFING ADMIXTURE BY CRYSTALLIZATION

DESCRIPTION

A high grade easy to handle integral waterproofing admixture for both waterproofing and concrete corrosion protection using unique nanotechnology to chemically modify the cement matrix by reacting with the cement paste to reduce pore & capillary size. The reaction between **Cormix H_2O Stop** and cement paste produces a non-soluble crystalline structure throughout the pores & capillaries permanently sealing the concrete. **Cormix H_2O Stop** is available in two forms liquid or powder.

USES & ADVANTAGES

Uses include for all types of waterproofing and concrete corrosion protection in basements, water tanks, reservoirs, dams, waste water plants, swimming pools, water treatment plants, tunnels, marine structures, concrete highways etc.

Advantages include:-

- Seals micro cracks. Can seal hairline cracks up to 0.5 mm.
- Concrete waterproofed throughout.
- Improved durability. Increases concrete strength
- Protection against Chloride and sulphate ingress.
- Withstands hydrostatic pressure.
- Improves chemical and carbonation resistance.
- Fast tracks construction.
- No installation costs, seams or joints.
- Does not rely on bond to work.
- Permanent waterproofing.
- Integral waterproofer.
- Non toxic. No V.O.Cs.
- Reduces opportunity for freeze thaw damage.
- Improves workability and strength.
- May reduce existing admixture dosage.
- No costly surface preparation.
- Added to concrete not constrained by weather conditions.
- Liquid form does not clump as powders and easy to dose.
- Enhances hydration process.
- Environmentally friendly.

PROPERTIES

	Liquid	Powder
Appearance :	Liquid	Powder
Colour:	Transparent	Grey Powder
pH :	13-14	13-14
Specific Gravity :	Approx. 1.21-1.23	-
Chloride Content : DIN EN 480-10	Nil	Nil
Bulk Density :	-	1.25-1.35

APPLICATION

Cormix H_2O Stop - Liquid

Cormix H_2O Stop is added to the concrete at the time of batching at dosages of 0.8 - 1 litre per 100 kg of total cementitious material by automatic dispensers.

Under certain conditions the dosage used may be 2-3 litre per 100 kg of total cementitious material to meet the specific requirements of a project. For the optimum dosage consult Cormix.

Cormix H_2O Stop - Powder

Cormix H_2O Stop powder should be dosed at of 0.8-1 kg per 100 kg of total cementitious material. As a guide line the following should be followed :

Central mixing operation : -

Mix the **Cormix H_2O Stop** powder with water to form a flowing slurry 25 kg of powder to 7.5-8 kg of water. Pour the mixture into the ready mix lorry. Mix the concrete as normal in the plant reducing the water content to account for that mixed with **Cormix H_2O Stop** pour the concrete into the lorry & mix for at least 5 minutes to ensure good distribution of **Cormix H_2O Stop**.

Dry batch ready mix concrete operations : -

Add the required quantity of **Cormix H_2O Stop** in powder form to the ready mix lorry. Drive the R.M.C lorry under the batch plant & add 60% of the water with 150-250 kg of aggregate mix for 2-3 minutes to ensure good distribution of **Cormix H_2O Stop**. Add the remaining materials to the lorry as normal practice.

Precast concrete plants :-

Add the **Cormix H_2O Stop** to the aggregate and sand mix for 3 minutes before adding cement & water.

***NOTES**: Good dispersion of the admixture is important to get a homogeneous mix. Therefore do not add Cormix H2O Stop powder directly to wet concrete as this may result in clumping & poor dispersion.*

Under certain conditions the dosage used may be 2-3 kg per 100 kg of total cementitious material to meet the specific requirements of a project. For the optimum dosage consult Cormix.

***Note : Cormix H_2O Stop** should be tested in trial mixes to determine the optimum dosage and any necessary changes to existing additive dosages. Do not use without checking workability, slump retention and retardation in advance. Agitate before use the liquid version.*

OVERDOSING

Overdosing of **Cormix H_2O Stop** will result in increased workability and possibly more rapid set. In the case of accidental overdosing check strengths and setting times before stripping forms.
Overdosing normally will have no detrimental long term side effects as long as cured correctly with water before stripping forms. In general 28 day strengths would be improved. If in doubt contact Cormix Technical Department.

STANDARDS

- Compressive strengths at 28 days according to ASTM C 39 showed strength more then control.
- Chloride diffusion is reduced significantly when measured according to ASTM C1202
- Cormix H2O Stop complies to EN 934-2

Cormix ® H_2O Stop

LIQUID AND POWDER FORM INTEGRAL WATERPROOFING ADMIXTURE BY CRYSTALLIZATION

- Cormix H2O Stop when used on Concrete is suitable for Potable Water Contact : BS 6920 -1-2000.
- Cormix H2O Stop is capable of Self-Healing of Cracks upto a Width of 0.5 mm.
- Comply to JIS A 1404 : Depth of Water penetration – Less than Control.
- Comply to BS 1881-P122 : Water Absorption – Less than Control.
- Air Content : Test mix ≤ 2% by volume above control according to BSEN 12350-7 : 2009 and BSEN 12350-1 : 2009.
- Compressive Strength : Test mix ≥ 85% of control according to BSEN 12350-7 : 2009 and BSEN 12390-3 : 2009.
- Capillary absorption :
  Test mix ≤ 50% by mass of control (7 days)
  Test mix ≤ 60% by mass of control (90 days)
  According to BSEN 480-5 : 2005 and BSEN 480-1/BSEN 196-1.
- Water soluble chloride : ≤ 0.1% by weight complies to BSEN 480-10 : 1997.
- Total chloride content : ≤ 0.1 % by weight complies to ISO 1158 : 1998.
- Alkali content : <3% by weight (powder) and < 15 % by weight (liquid) complies to BSEN 480-12 : 1998
- Silica content : <50% by weight (powder) and < 1% by weight (liquid) complies to BSEN 196-2.
- Dry material content : > 95% by weight (powder) and > 30±5 % by weight (liquid) complies to BSEN 480-8 : 2012.
- Density : 1.21-1.23 kg/litre (liquid) complies to BS 4522 :1988.
- pH : 13-14 complies to ISO 4316 : 1977
- Complies to (WRAS) water regulations advisory scheme specification according to BS6920-Part 1 :2014
- Complies REACH requirements as per article 33 (1) of the REACH REGULATION (EC 1907/2006).

PACKAGING

Cormix H_2O Stop (Liquid) is available in 200 ltr drum & 1,000 ltr IBC.
Cormix H_2O Stop (Powder) is available in 25 kg paper bags or 25 kg plastic pails.

STORAGE & SHELF LIFE

The product must be stored shaded at a minimum temperature of 45ºF (7ºC). Shelf life is one year when stored under proper conditions in original unopened packaging. Agitate the liquid form before use and protect from freezing.

HEALTH & SAFETY

Cormix H_2O Stop is highly alkaline. Protect hands with rubber gloves and wear safety goggles during mixing & application. Avoid contact with skin or eyes. Should contact occur, flush copiously with water. If irritation persists, contact a physician.

TECHNICAL SERVICE

Technical assistance including mix design preparation and supervision on site during incorporation of **Cormix H_2O Stop** is available by contacting Cormix International Limited.

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International

DCL PRODUCT CONFORMITY
BS EN 934-2
Certificate No. CL19020718

Cormix International Limited
89 Romklao Rd, Sansab,
Minburi, Bangkok 10150
EN 934-2
Water Resisting Admixtures

Capillary absorption:	
7 days curing:	≤ 50 %
90 days curing:	≤ 60 %
Compressive Strength:	≥ 85 % 28 days
Air Content in fresh concrete:	≤ 2 %

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Contite ® CFM

A 2 IN ONE FLEXIBLE WATERPROOFING MEMBRANE ESPECIALLY FOR UNDERGROUND STRUCTURES

DESCRIPTION

Contite CFM is a single component high performance flexible waterproofing membrane based on EVA incorporating reactive crystalline waterproofing technology for the protection of various concrete structures including tunnels, underground stations, shafts, caverns, basements etc.
Complies to EN1504 Part 9 and EN1504 Part 2

- Principle 1 : Protection Against Ingress (PI).
  Method 1.2 – Impregnation.
  Method 1.3 – Surface Coating.
  Method 1.8 – Application of Membranes.
- Principle 2 : Moisture Control. (MC)
  Method 2.2 – Impregnation.
  Method 2.3 – Surface Coating.
- Principle 8 : Increasing Resistivity (IR).
  Method 8.3 – Overlays or Coatings.

USES & ADVANTAGES

Contite CFM incorporates the benefites of a flexible polymer fully bonded waterproof membrane with reactive crystalline subsurface waterproofing.
Contite CFM may be applied to number of substrates and where sandwiched between two layers of structural concrete including:

- Basements.
- Subway stations.
- Shotcrete tunnel and cavern linings.
- Diaphragm wall and piles.
- Mining.
- Water retaining structures.
- All concrete structures requiring waterproofing.

Advantages include:-

- Can apply to damp concrete.
- Protecting concrete against aggressive ground waters.
- Very easy to install in big areas by spray especially to difficult surfaces.
- No fixing or anchoring required as spray applied
- No seams or joints.
- Very fast curing time from 2-3 hours depending on temperatures and humidity.
- Can be applied over concrete within 24 hours unlike other conventional waterproofers that require 28 days & dry surface.
- Excellent crack bridging properties and elongation.
- Connect to other waterproofing systems easily.
- No undercutting, easy to repair and difficult to damage. No protection required.
- Fully bonded.
- Can overcoat within 24 hours. Excellent adhesion to concrete and steel.
- Hard wearing suitable for application over shotcrete containing steel fibres.
- Non flammable.
- No VOCs.
- Life of material permanent when sandwiched between concrete linings.
- Crack bridging & sealing.
- Waterproofing internally by permanent crystallization.

Advantages over sheet membrane:-

- Easy to handle and apply over various complex shapes/areas without any problem.
- Rate of application is higher and quick as mentioned below :
  - Approx. 80 - 95 m^2/hr with the use of approx. 3 workers.
  - Approx. 160-170 m^2/hr with the use of robotic equipment and spray application.
- Spray application can be done continuously and consistently without the need to use any waterstops in between the section nor division of sections is required.
- Rock bolts/anchor bolts used in tunnels can be easily coated & protected from corrosion by spray application.

Advantages over Polyurethane Spray applied systems :-

- Can apply in one coat up to 2 mm.
- Can apply to damp concrete, no bubbling.
- Crack bridging & sealing.
- Permanent lifelong waterproofing.
- Sub surface and surface waterproofing.
- Can apply within a few days of concreting.
- Non-toxic, no fire hazard, no VOCs.
- Economical.
- No protection required.

PROPERTIES

Appearance:	Light grey and orange powder (other colours available)
SG:	Approx.550-650 gm/litre
Application Thickness:	2-6 mm
Elongation:	≥150%
ASTM D412	
Waterproof Penetration:	Zero
BS EN 12390-8:2000	
Bond strength to Concrete:	>1.5N/mm^2
BS EN ISO 4624:2003/ASTM D4541	
Bond Strength to Steel:	>2Nmm^2
BS EN ISO 4624:2003/ASTM D4541	
Crack Bridging Ability:	>2.5 mm when applied at correct thickness BS EN 1062-7; 2004 Class A
Non Flammable:	Class E.
BS EN ISO 13501-1	
BS EN ISO 11925-2	
Chemical Resistance:	Complies with BSEN 14414 Method A
Resistance to Leaching:	Complies with BSEN 14415 Method A & B
Fire Resistance:	Non ignitable
BS EN ISO 11925-2	

PRIMER PROPERTIES

Appearance:	Blue liquid
SG:	Approx.1.20-1.22 kg/litre
Toxicity:	Non toxic
Drying Time:	1-3 hours
pH:	10-13
Explosion Hazard:	None
Flash Point:	None

Test results above are based on Laboratory conditions.

Contite ® CFM

A 2 IN ONE FLEXIBLE WATERPROOFING MEMBRANE ESPECIALLY FOR UNDERGROUND STRUCTURES

SUBSTRATE PREPARATION

Ensure the surfaces to be coated are clean and sound, free from dust, laitance, curing compounds, grease, dirt, oil, running water or other surface contaminants. Wall to floor joints shall have a fillet to avoid sharp corners. Penetrations shall also be detailed to avoid the same.
Repair damaged surfaces or honey combed concrete with **Conpatch 600MCI** or other appropriate repair material from Cormix.
In the case of cracks consult Cormix for treatment method. Static cracks can be routed out and repaired with **Contite Seal Mortar** Moving cracks should be treated via injection with **Contite G600** polyurethane gel.
If water is running either drain away or plug using a suitable product from Cormix.

PRIMING

Apply the primer by knapsack spray, brush or squeegee at 5 m^2/litre. Allow to dry for 6 hours.
The primer should be dry before applying the membrane.
Coverage rate are from 100-150 m^2 per hour.

APPLICATION

Contite CFM can be applied using a Robotic Spray Equipment such as Rotor Shotcreting Machine along with compressed air set up to feed the **Contite CFM** through a Hose with 32 mm diameter, whereas water is mixed with **Contite CFM** at the Nozzle.
The equipment details required are as mentioned below:

SHOTCRETE MACHINE

- Rotor shotcreting machine with rotor having 12 round holes. Each round hole is 90 mm high.
- The base of rotor with 90 mm coupling.
- The dust collector of rotor with 90 mm high coupling.
- The diameter of spraying nozzle = 32 mm, with approximately 16 to 18 water ring holes.
- The diameter of spraying hose = 32 mm.
- Small areas can be applied by brush.

Water Additions

Contite CFM can be sprayed by adding water at the nozzle. The water additions should be between 35% to 55% by weight

HAND HELD, MORTAR SPRAYER

- Drill power = 800 w.
- Air compressor power = 1600 w.
- Power Requirement = 220-240 V/50Hz.
- Deliver = 1-10 L/min.
- Max pressure = 2 MPa.
- Largest particles = 1 mm.
- Length of high pressure hose = 5 M.
- Funnel volume 40 L.
- Type of hydraulic oil = Anti-wear hydraulic oil ISO VG46

Water Additions:

When using **Contite CFM** pre-mixed for smaller application areas the Water additions should be between 6.75 and 8.25 Lts per 15 kg of **Contite CFM** powder.

UNDER FLOOR SLAB APPLICATION

Contite CFM is suitable for use as a spray applied waterproof membrane beneath basement slabs in underground construction such a Metro Stations, Multi use Developments and basement car parks. The sequence of installation is shown below. Please refer to our Method Statements and detail drawings available from or Technical Services Department.

1. Install a 100mm x 100mm fillet of **Conpatch 600MCI** at the wall / floor slab joint.
2. First Apply a 'stripe' coat of **Contite CFM** up to 150mm x 150 mm to the wall and floor over the installed fillet @1mm thickness.
3. Place a polythene 'debonding sheet' on top of the lean concrete floor slab and taking it 150mm up the wall.
4. Spray apply **Contite CFM** onto the diaphragm wall and on top of the polythene sheet at a minimum thickness of 2mm. Allow to cure for a minimum 24 hours.
5. Install as directed **Contite Waterstop** (on uneven surfaces use **Contite Waterbar CTG**) to the diaphragm wall. Allow **Contite Waterbar CTG** to cure for 6hrs before proceeding
6. Following installation of the base slab reinforcement place the concrete within 30 days of application of the **Contite CFM.**

Note :

- *The applied **Contite CFM** must be clear and free from dirt and standing water prior to the installation of the floor slab.*
- *For **Contite CFM** applied beneath the basement slab priming is not required.*

COVERAGE RATE OF CONTITE CFM

Approx. 1.2 kg - 3.6 kg /m^2 for 2 - 6 mm thickness.
Apply in multiple layers up to a max of 2 mm per layer may build up to 6 mm. Minimum time between coats is 2 to 3 hrs depending on temperature and humidity.
Primer : 5 m^2/litre.

QUALITY CONTROL

Quality Control for checking thickness of applied membrane can be done as below :

1) Using wet film depth gauge, regular checking of wet film thickness for applied membrane at various spots.
2) After application: cut out small patches of membrane in the form of square (5 x 5 cm) & check for thickness.

Contite ® CFM

A 2 IN ONE FLEXIBLE WATERPROOFING MEMBRANE ESPECIALLY FOR UNDERGROUND STRUCTURES

CURING AND OVER COATING

The material is tack free in 2-3 hours.
It may be covered coated after 24 hours with concrete, shotcrete or other back fill materials.

CLEANING

The Spray Equipment & the product carrying lines should be cleaned using Compressed air.
The Nozzle should be cleaned with water.
Handheld, mortar sprayer should be cleaned with water.

PACKAGING

Contite CFM : 15 KG bag or according to customer requirements.

Contite CFM Primer : 25 ltr pail.

STORAGE & SHELFLIFE

The shelf life is 12 months if unopened, stored free from frost, moisture and direct sunlight.

HEALTH & SAFETY

Contite CFM and Primer are non-toxic but is alkaline in nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention.
Eye Contact : Wash out eye with plenty of water. Obtain medical attention urgently. Eyelids should be held away from the eyeball to ensure thorough rinsing.
Skin Contact : Wash skin with soap and water.
Ingestion : Wash out mouth with water. Do not induce vomiting. Have victim drink 240-300 ml of water to dilute stomach contents. Obtain medical attention urgently.
Inhalation : Remove from exposure. Unlikely to occur. However provide symptomatic medical treatment if required.
Contite CFM is non-flammable and non-toxic.

TECHNICAL SERVICE

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CORMIX®

(1.3)

Waterproofing by Crystallization with Corrosion Inhibitors

Cormix International Limited ▶ The Construction Chemicals Specialist
89 Romklao Road, Minburi District, Sansab Subdistrict, Bangkok 10510 THAILAND
T (66 2) 917 3955 - 8 | F (66 2) 917 3959, 543 8891 | WWW.CORMIX.COM

Contite ® Seal ACCI

CRYSTALLINE WATERPROOFING SLURRY WITH CORROSION INHIBITOR NO CURING

DESCRIPTION

Contite Seal ACCI 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 tracts of 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 tracts 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.
In addition reinforcing steel is protected from corrosion by the addition of a corrosion inhibitor.
Contite Seal ACCI is also available with an anti-freeze additive incorporated for applications during the winter season at low temperatures.
Complies to EN1504 Part 9 and EN1504 Part 2

- Principle 1 : Protection Against Ingress (PI).
  Method 1.3 – Surface Coating.
- Principle 2 : Moisture Control. (MC)
  Method 2.3 – Surface Coating.
- Principle 5 : Increase in Physical Resistance (PR).
  Method 5.1 – Overlays or Coatings.
- Principle 6 : Resistance to Chemicals (RC).
  Method 6.1 – Overlays or Coatings.
- Principle 8 : Increasing Resistivity (IR).
  Method 8.3 – Overlays or Coatings.
- Principle 9 : Cathodic Control (CC).
  Method 9.1 – Limiting oxygen Content (at the cathodic) by Saturation or Surface Coating.
- Principle 11 : Control of the Anodic Areas (CA).
  Method 11.3 – Applying Corrosion Inhibitors on Concrete.

USES & ADVANTAGES

Contite Seal ACCI 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, water tanks and swimming pools. **Contite Seal ACCI** provides concrete protection against waste water, sewage, certain chemical solutions, dilute intermittent acids, carbonation, salt water, sulphates, and other harmful materials.
Contite Seal ACCI is a replacement for the hazardous and tedious method of installing preformed sheet membrane systems for basement waterproofing.

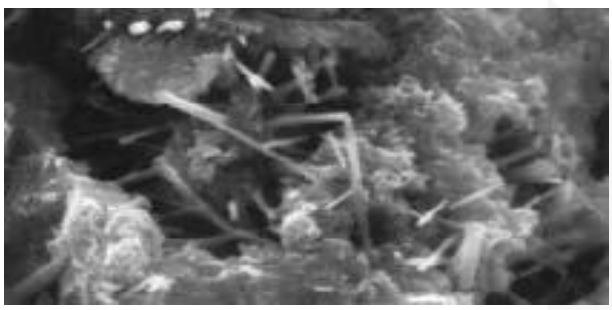
Advantages include:-

- Air curing system. No water curing or polythene sheet covering required after application.
- Forms subsurface membrane.
- Can be used as final topcoat or finish coat.
- Apply by brush, roller or spray.
- Can penetrate deep 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 tanks.
- No solvents. No harmful vapours.
- Can apply to green or moist concrete.
- Protects reinforcement from corrosion.
- Eco friendly green product.
- Fast tracks projects.
- Becomes an integral (internal) part of the concrete and is permanent.
- 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 membrane 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.
- Compatible with SCC and concrete containing PFA and other pozzolanic materials.

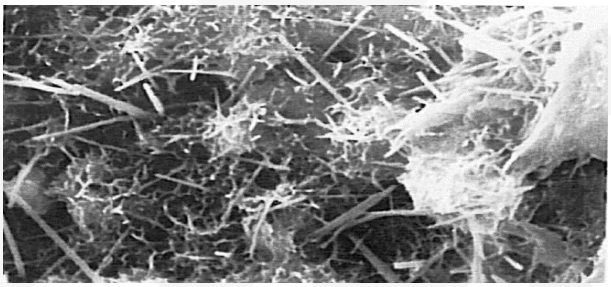
PROPERTIES AND COMPLIANCE

Component :	Single
Form:	Fine Grey powder
Fresh Wet Density:	Approx. 1.90 kg/ltr
Chloride Content:	Nil
Water Permeability:	Conforms to BSEN 12390
Toxicity:	Nontoxic BS 6920-1 : 2000. Tested by SGS
Chemical Resistance:	Tested to ASTM C-267-77 resists chemicals in pH range 3-11.
Yield:	16.5 ltr/25 kg bag

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



Crystal growth in concrete after application at 7 days.



Fully developed crystal growth at 28 days within the capillary tracts of concrete blocking flow of water.

Contite ® Seal ACCI

CRYSTALLINE WATERPROOFING SLURRY WITH CORROSION INHIBITOR NO CURING

STANDARDS

Conforms to:

- BS EN 12390-8:2009 - Testing Hardened Concrete: Depth of Penetration of Water Under Pressure. Depth of Water penetration @ 5 bar water pressure for 72 hrs – Max 80% of Control.
- Crystal growth depth in the Concrete by SEM – TISTR lab.
- Standard Test method for examination of Water & Waste Water –APHA,AWWA- SGS lab

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 ACCI** treatment. If surfaces are too smooth the concrete should be acid etched, lightly sandblasted or water blasted. 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 ACCI** 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 ACCI** 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.

MIXING

Mix one 25 kg bag with 7.5 - 8.0 litres of clean potable water. During very hot and humid conditions chilled water may be used. 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 METHOD

Slurry coat:

Apply **Contite Seal ACCI** with a stiff fiber brush or spray. 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.

Dry Shake Method:

For Newly Poured Concrete - Use **Contite Seal ACCI** directly from the container. Wearing rubber gloves distribute the powder evenly by hand over the freshly poured concrete at 1.6 kg/m^2 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.

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^2. If delays in pouring concrete keep **Contite Seal ACCI** moist by mist/fog spraying water.

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 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 ACCI** Slurry or dry shake may be applied to the joints surface & over the waterstop at 1.5 kg/m^2. 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 ACCI** treatment should be applied with a semi-stiff bristle brush, janitor's broom (for large horizontal applications) or with specialized spray equipment.

CURING

Curing is not required. This is an air curing product. During hot and humid conditions to avoid fast water loss, the coating may be protected by using polythene sheet held tightly to the surface for 24 hours after immediate application.

OVERCOATING

All **Contite Seal ACCI** treated surfaces to receive epoxy coating or to be painted must be neutralized with a solution of **Contite Seal ACCI** cleaner. The **Contite Seal ACCI** 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, water tanks, etc.), **Contite Seal ACCI** should be allowed to set for 12 days before filling with liquid. Allow at least 48 hours before foot traffic.

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

Contite ® Seal ACCI

CRYSTALLINE WATERPROOFING SLURRY WITH CORROSION INHIBITOR NO CURING

CONSUMPTION RATES

Contite Seal ACCI 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 40ºF (4ºC). 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 ACCI** should be between 0.5 kg and 0.75 per square meter per coat. As a minimum one coat may be applied at 0.8-1 kg/m^2. If in doubt consult Cormix International Technical Service. The following is a guide to material consumption.

Dry Shake Method: 1.6 kg/m^2 before final troweling work.
Backfilled Concrete Surfaces, Internal Walls & Water Retaining Structures: 2 coats applied at 0.75 kg/m^2 per coat by brush or spray or 1 coat at 1 kg/m^2.
Backfilled Concrete Surfaces with Hydrostatic Pressure: 2 coats at 0.75-1 kg/m^2/coat or one coat at 1 kg/m^2. If high hydrostatic pressure is anticipated consult Cormix.
Construction Joints: 1.5 kg/m^2 applied in slurry coat or dry powder consistency just before pouring concrete.
Blinding Concrete: 1.2 kg/m^2 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^2.

LIMITATIONS

- Do not immerse in water retaining structures until 12 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.
- Do not apply to dry surfaces.

PACKAGING

Contite Seal ACCI is supplied in 25 kg plastic lined paper bags or 25 kg plastic pail.

STORAGE & SHELF LIFE

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

HEALTH & SAFETY

Contite Seal ACCI 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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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CONTACT DETAILS

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Cormix ® H2O Stop + CI

TWO IN ONE CRYSTALLINE CONCRETE ADMIXTURE AND CORROSION INHIBITOR

DESCRIPTION

A high grade easy to handle integral waterproofing admixture for both waterproofing and concrete corrosion and reinforcement protection, using unique nanotechnology to chemically modify the cement matrix by reacting with the cement paste to reduce pore & capillary size. The reaction between **Cormix H_2O Stop+CI** and cement paste produces a non-soluble crystalline structure throughout the pores & capillaries permanently sealing the concrete. In addition reinforcing steel is protected from corrosion by the addition of a corrosion inhibitor.

Cormix H_2O Stop+CI is available in two forms liquid or powder.

Complies to EN1504 Part 9

- Principle 9 Cathodic Control (CC)
  Method 9.1 : Limiting oxygen content (at the cathode) by saturation or surface coating.
- Principle 11 Control of the anodic areas (CA)
  Method 11.3 : Applying corrosion inhibitors on concrete.

USES & ADVANTAGES

Uses include for all types of waterproofing and concrete corrosion protection in basements, water tanks, roofs, reservoirs, dams, waste water plants, pipes, swimming pools, water treatment plants, tunnels, marine structures etc.

Advantages include:-

- Available in liquid & powder form.
- Two in one product.
- Protects reinforcement from corrosion.
- Seals micro cracks. Can seal hairline cracks up to 0.5 mm.
- Concrete waterproofed throughout.
- Improved durability.
- Protection against Chloride and sulphate ingress.
- Withstands hydrostatic pressure.
- Improves chemical and carbonation resistance.
- Fast tracks construction.
- No installation costs, seams or joints.
- Does not rely on bond.
- Permanent waterproofing.
- Integral waterproofer.
- Non toxic.
- Reduces opportunity for freeze thaw damage.
- Improves workability and strength.
- May reduce existing admixture dosage.
- No costly surface preparation.
- Added to concrete not constrained by weather conditions.
- Liquid does not clump as powders and easy to dose.
- Enhances hydration process.

PROPERTIES

	Liquid	Powder
Appearance :	Liquid	Powder
Colour:	Transparent to pale yellowish liquid	Grey Powder
pH :	10-12	13-14
Specific Gravity :	Approx. 1.15-1.17	-
Chloride Content :	Nil	Nil
Bulk Density :	-	1.25-1.35

APPLICATION

Cormix H_2O Stop+CI - Liquid
Cormix H_2O Stop+CI is added to the concrete at the time of batching at dosages of 0.8-1 litre per 100 kg of total cementitious material by automatic dispensers.
Under certain conditions the dosage used may be 2-3 litre per 100 kg of total cementitious material to meet the specific requirements of a project. For the optimum dosage consult Cormix.

Cormix H_2O Stop+CI - Powder
Cormix H_2O Stop+CI powder should be dosed at of 0.8-1 kg per 100 kg of total cementitious material. As a guide line the following should be followed :

Under certain conditions the dosage used may be 2-3 kg per 100 kg of total cementitious material to meet the specific requirements of a project. For the optimum dosage consult Cormix.

***Note : Cormix H_2O Stop+CI** should be tested in trial mixes to determine the optimum dosage and any necessary changes to existing additive dosages. Do not use without checking workability, slump retention and retardation in advance. Agitate before use the liquid version.*

Central ready mix concrete mixing operation : -
Mix the **Cormix H_2O Stop+CI** powder with water to form a flowing slurry 25 kg of powder to 7.5-8 kg of water. Pour the mixture into the ready mix lorry. Mix the concrete as normal in the plant reducing the water content to account for that mixed with **Cormix H_2O Stop+CI** pour the concrete into the lorry & mix for at least 5 minutes to ensure good distribution of **Cormix H_2O Stop+CI**.

Dry batch ready mix concrete operations : -
Add the required quantity of **Cormix H_2O Stop+CI** in powder form to the ready mix lorry. Drive the R.M.C lorry under the batch plant & add 60% of the water with 150-250 kg of aggregate mix for 2-3 minutes to ensure good distribution of **Cormix H_2O Stop+CI**. Add the remaining materials to the lorry as normal practice.

Precast concrete plants :-
Add the **Cormix H_2O Stop+CI** to the aggregate and sand mix for 3 minutes before adding cement & water.

***NOTES**: Good dispersion of the admixture is important to get a homogeneous mix. Therefore do not add **Cormix H_2O Stop+CI** powder directly to wet concrete as this may result in clumping & poor dispersion.*

OVERDOSING

Overdosing of **Cormix H_2O Stop+CI** will result in increased workability and possibly more rapid set. In the case of accidental overdosing check strengths and setting times before stripping forms.
Overdosing normally will have no detrimental long term side effects as long as cured correctly with water before stripping forms. In general 28 day strengths would be improved.
If in doubt contact Cormix Technical Department.

Cormix ® H2O Stop + CI

TWO IN ONE CRYSTALLINE CONCRETE ADMIXTURE AND CORROSION INHIBITOR

STANDARDS

- Compressive strengths at 28 days according to ASTM C 39 showed strength more then control.
- Chloride diffusion is reduced significantly when measured according to ASTM C1202
- **Cormix H2O Stop+CI** complies to EN 934-2
- **Cormix H2O Stop+CI** when used on Concrete is suitable for Potable Water Contact : BS 6920 -1-2000.
- **Cormix H2O Stop+CI** is capable of Self-Healing of Cracks upto a Width of 0.5 mm.
- Comply to JIS A 1404 : Depth of Water penetration – Less than Control.
- Comply to BS 1881-P122 : Water Absorption – Less than Control.

PACKAGING

Cormix H_2O Stop+CI (Liquid) is available in 25 ltr pail & 200 ltr drum.
Cormix H_2O Stop+CI (Powder) is available in 25 kg paper bags or 25 kg plastic pails.

STORAGE & SHELF LIFE

The product must be stored shaded at a minimum temperature of 45ºF (7ºC). Shelf life is one year when stored under proper conditions in original unopened packaging. Agitate the liquid form before use and protect from freezing.

HEALTH & SAFETY

Cormix H_2O Stop+CI is highly alkaline. Protect hands with rubber gloves and wear safety goggles during mixing & application. Avoid contact with skin or eyes. Should contact occur, flush copiously with water. If irritation persists, contact a physician.

TECHNICAL SERVICE

Technical assistance including mix design preparation and supervision on site during incorporation of **Cormix H_2O Stop+CI** is available by contacting Cormix International Limited.

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
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CONTACT DETAILS

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Water Repellents

Cormix International Limited ▶ The Construction Chemicals Specialist
89 Romklao Road, Minburi District, Sansab Subdistrict, Bangkok 10510 THAILAND
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Contite ® Watershield

SILANE - SILOXANE WATER BASED HYDROPHOBIC WATER REPELLENT SEALER

DESCRIPTION

Contite Watershield is a water based, VOC free, non flammable penetrating water repellent sealer specifically formulated for the protection of a wide variety of surfaces. It will penetrate into masonry, concrete, porous tiles, facades stones and grout and bond chemically to the surface rendering it hydrophobic. When cured it does not alter the appearance of surface and being non-film forming it will allow the substrate to "breathe".

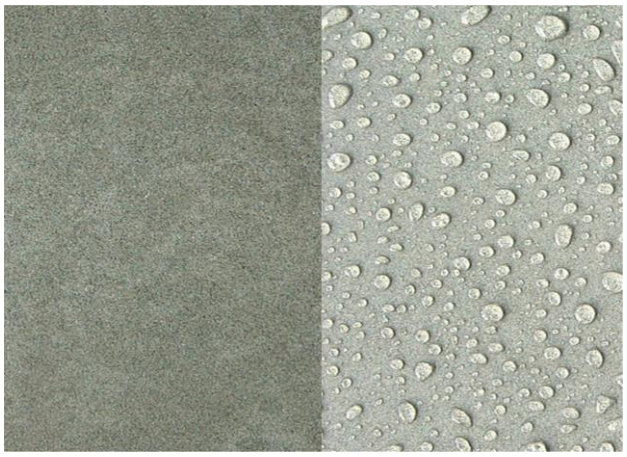
Complies to EN 1504 Part 9 and EN1504 Part 2.
Principle 1 : Protection against ingress (PI)
- Method 1.1 : Hydrophobic impregnation
Principle 2 : Moisture Control (MC)
- Method 2.1 : Hydrophobic impregnation
Principle 8 : Increasing resistivity (IR)
- Method 8.1 : Hydrophobic impregnation

USES & ADVANTAGES

Uses include to protect concrete structures such as above grade tanks, reservoirs, columns, bridges, building facades, both old and new and other structures. Suitable for all tiles including ceramic, marble, slate and terracotta.
Use to increase water repellency in bricks, for increased durability of concrete paths, drives, and facades to reduce weathering on natural stone, to seal decorative tiles against moisture. For application in special conditions, consult Cormix for detailed information.

Advantages Include:-

- Non film forming and not affected by UV radiation.
- Preventing spalling resulting from rebar attack.
- Easy to apply & ready to use.
- No costly removal of tiles or renders to re-waterproof walls.
- Good depth of penetration.
- Treated surfaces are hydrophobic and retain their original appearance.
- Water based and environmentally friendly.
- No fire hazard during application, VOC free.
- Long term effectiveness over 5-10 years.
- Minimises efflorescence.
- Keeps substrate clean longer and makes cleaning easier.
- Excellent resistance to chloride ion penetration and water permeability.
- 100% moisture vapour transmission.
- Non staining.
- Chemically resistant to fuels, atmospheric contaminants & oils.
- Suitable for many substrates.
- Average depth of penetration 2-5 mm depending on porosity.



Concrete protected with **Contite Watershield**

STANDARDS

The product complies to the following :

- ASTM C1202 – Chloride ion penetration – less than control.
- JIS A1404 – Water permeability – less than control.

PROPERTIES

Appearance :	Milky liquid
pH :	4-8
Specific Gravity :	0.99-1.01 kg/litre

SURFACE PREPARATION

Before using **Contite Watershield** it is important to ensure that the surface to which it is to be applied is dry clean and free from dust and loose material. All contaminants such as oil, grease or any surface contamination must be removed to ensure adequate penetration when the product is applied.

Remove any silicone sealant strips and clean mould off tiles and grout using bleach. Previously painted surfaces must have all of the existing coating removed to allow penetration into the tiles and grout.

Where surfaces have been water blasted or washed down to remove contamination they must be allowed to dry out completely before application is commenced otherwise impregnation will not occur. Cracked or damaged areas must be repaired and sealed prior to application of materials.

Contite® Watershield

SILANE - SILOXANE WATER BASED HYDROPHOBIC WATER REPELLENT SEALER

APPLICATION

Always pre test surface to ensure no white precipitate is apparent, allow surface to dry for 24 hours. Start at top & work down keeping a wet edge at all times.
Contite Watershield can be applied by dipping, spraying or brushing. On tiles begin at the top of the wall and brush liberally over tiles and grouting. Finish with the base. Work well into edges. Use a soft, dry cloth to remove any excess solution left on the surface or the tiles. A second coat may be applied immediately (wet on wet). Allow to dry for at least 24 hours, before subjecting the surface to water.
It is advisable to protect in the bathrooms the shower screen, glass and any painted areas against splashes. Splashes can cause wetting and cleaning problems. If splashed, clean with water immediately.
Contite Watershield is not recommended for surfaces subjected to hydrostatic pressure.

LIMITATIONS

Do not use the product below 0°C.

Do not apply the product, if rain and high wind conditions are anticipated.

COVERAGE RATES

Contite Watershield should be applied in 2 flood coats (wet on wet) at an application rate of 0.2 litres/m^2 per coat. It may be applied by roller, brush, or portable knapsack spray. Allowance should be made for substrate porosity and wastage.

PACKAGING

25 litre pails & 200 litre drums.

STORAGE & SHELF LIFE

When stored in original airtight containers at or below 25°C **Contite Watershield** has a shelf life of 6 months.

HEALTH & SAFETY

Contite Watershield is an alkaline material. In enclosed areas provide ventilation. If on skin wash immediately, if in eyes flush immediately with water for at least 15 minutes & obtain prompt medical attention.

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

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ISO 14001 : 2015 verified by Lloyd's Register International.

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Elastomeric Coatings / Membranes

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Elastoclad ®

100% ACRYLIC ELASTOMERIC WATERPROOFING AND ANTI CARBONATION COATING

DESCRIPTION

The **Elastoclad** system comprises a single component water based, high solids, 100% acrylic copolymer waterproof and anti carbonation membrane coating applied over a range of primers dependent on the substrate type. **Elastoclad** is a crack accommodating coating containing additives to inhibit the growth of mould and resist bacterial growth and resists aggressive elements.
Complies to EN1504 Part 9 and EN1504 Part 2.

- Principle 1 : Protection against Ingress (PI).
  Method 1.3 – Surface coating.
  Method 1.8 – Application of membranes.
- Principle 2 : Moisture Control (MC).
  Method 2.3 – Surface coating.
- Principle 8 – Increasing Resistivity (IR).
  Method 8.3 – Overlays or coatings.

USES & ADVANTAGES

Use as a decorative waterproofing and anti carbonation membrane to most types of building facades, walls, roofs and gutters after the recommended primer/sealer application. **Elastoclad** has approval for the safe encapsulation of asbestos and for use in “wet areas” such as bathrooms. It provides a protective waterproofing skin over polyurethane foam, protecting the PU foam from UV and weather attack. On roofs and balconies, **Elastoclad** provides a durable, non skid, waterproof finish which will accept regular foot traffic.
When applied as a multi-layer system incorporating reinforcement fabric, **Elastoclad** is also suitable for waterproofing concrete decks subject to light vehicular traffic.
Elastoclad is suitable for application to many common substrates including concrete, carbon fibre, fibrous cement products, metals, timber and bituminous membranes. Some special priming may be required.
Advantages include:-

- Proven track record over 30 years.
- Safe to use, water based acrylic formulation.
- Easy water cleanup.
- One component - readily applied direct from pail.
- Excellent resistance to UV, weathering and CO_2.
- Excellent build properties enable application to both horizontal and vertical surfaces. Lightweight no topping required.
- Can be applied to a wide range of substrates.
- Various colours available. Colour fast.
- Highly flexible - accommodates movement and minor cracking of substrates.
- No solvents or fire hazard. No pungent smell.
- Acoustic dampening properties.
- Excellent long term durability.
- Fast application.
- High solids & resin content.
- Remains flexible through use of high grade 100% elastomer acrylic polymers.
- Low maintenance costs.
- Reduced energy cost due to heat reflectivity.
- Resistant to foot traffic.
- Excellent dirt releasing ability.
- No need to remove existing system in maintenance situation e.g. existing sheet membrane, therefore reduces programme time, noise, dirt, debris etc.

PROPERTIES AND COMPLIANCES

Colour:	4 standard colours plus special colours made to order.
Volume solids:	40%
ASTM D2697	
Specific Gravity:	Approx. 1.26
Physical or Chemical Change:	Dries through loss of water.
Drying Tack free:	40 minutes (30ºC, 50% RH)
Recoat:	2 hours
Fully dried:	7 days
Application temp:	5 - 40ºC
Hardness:	50-60 shore A
ASTM D2240	
Elongation:	>500 %
ASTM D412	
Tensile Strength:	> 1 MPa
ASTM D412	
Bond Strength:	>0.5 MPa
ASTM D4541	
Tear Strength:	>10 MPa
ASTM D624	
Initial Surface Absorption:	10 min 0.010 ml/m^2/sec
BS 1881 : Part 5	30 min 0.010 ml/m^2/sec
	60 min 0.005 ml/m^2/sec
Accelerated Weathering:	No cracking.
ASTM G154	
Chemical resistance:	Unaffected by a range of mild acids, alkalis, and is resistant to bio deterioration. Cormix International should be consulted in respect of other chemicals.

Heat Reflectance

White **Elastoclad** offers 80% reflection of solar energy providing the following advantages:-

- Minimises surface temperature gain.
- Prevents roof degradation of existing substrate.
- Minimises expansion/contraction experienced with
- temperature changes extending the life of the roofing system.
- Decreases energy consumption.

SUBSTRATE PREPARATION & PRIMING

Surfaces shall be sound, clean, dry, and free from oil or grease. Moisture shall not be escaping from the substrate.
If moisture is escaping seal with 2 coats of **Floorgard Moisture Barrier.**

Elastoclad ®

100% ACRYLIC ELASTOMERIC WATERPROOFING AND ANTI CARBONATION COATING

Concrete & masonary surfaces
Floorgard Moisture Barrier, Elastoclad Clear Sealer.
Steel, aluminium, galvanised steel & zinc
Elastoclad Primer 2
Bituminious or asphalt surfaces
Consult Cormix.
Timber
Elastoclad Acrylic Sealer.
Previously coated substrates
Elastoclad Clear Sealer

Sound, previously coated or primed surfaces
The old surface should be thoroughly scrubbed with detergent and water, then sanded or wire brushed to ensure mechanical adhesion. Seal with **Elasto Coat Clear Sealer**.

Crumbling walls
The application of **Elastoclad** will prevent the erosion of weak, crumbling walls and will readily bridge hairline cracks.

Overcoating old Elastoclad
Clean the surface, then apply a single coat of **Elasto Coat Clear Sealer** and allow to dry for one to two hours.

Expanded plastics, carbon fibre, polystyrene and polyurethane foam etc.
Apply 2 coats of **Elastoclad** directly over clean surfaces.

The treatment of joints liable to movement
These must be bridged with **Elastoclothe** reinforcement.

The reinforcement should be laid and stippled flat on the 1st coat of wet **Elastoclad** and allowed to dry. **Elastoclothe** consumes upto 30% more material and the 1st coat shall be applied at coverage of 2.13 m^2/litre/coat. It should then be covered with a thin layer of **Elastoclad** with a generous overlay on each side of the mesh and allowed to dry.
This followed by a minimum of 2 coats of **Elastoclad** over the entire surface, at coverage of 2.13 m^2/litre/coat.

Mould infested surfaces
Scrape or clean thoroughly; all finishes lifting or badly infested should be removed. Wash down with a water soluble fungicide or one part of domestic bleach to eight parts of water and then rinse off residues. Make good any defects and allow walls and repairs to completely dry.

Notes : All sealer/primer applications to be allowed to dry prior to the application of the first coat of **Elastoclad.**

APPLICATION

Prior to applying **Elastoclad** to the roof surface all detailing work must be completed on seams, splits, protrusions, fixings, drains, flashings, fasteners etc. The detailing shall be completed using **Conflex PS** or **Elastoclothe** reinforcement embedded in **Elastoclad**. Primers shall have been applied and dried.
Elastoclad shall be extended up & over pipes, parapets, vents & fixings to finish at least 10 cm. above the substrate. The coating should be extended under flashings.
Coats of **Elastoclad** shall be installed in a direction perpendicular to the last one except if coating metal roof panels.
Surfaces shall be uniformly coated & free from voids, blisters or pin holes. Before recoating previous coats must have adequately cured. Several hours are required to achieve resistance to rain or dew. Long term resistance will take longer depending on weather conditions, resistance to ponding shall require 24-48 hours.
All dirt, dust or pollution that falls on the coating between coats shall be removed before applying the next coat. Film thickness may be checked with a wet film gauge.
In high temperatures **Elastoclad** in opened containers may skin over, remove the skin before mixing. To prevent skinning cover the container with plastic.
Diluting **Elastoclad** with water is not recommended as its properties will be effected. Do not leave **Elastoclad** in equipment, purge with water. Spraying material with temperatures below 15°C will become more difficult due to its cohesive nature.
Spraying by airless spray is prefered over flat surfaces, a heavy to medium nap roller can be used and brush or roller for touch up or detail work.
The application using brush or roller requires laying the material onto the surface, @2.8 m^2/litre/coat, to achieve the 150 microns dry film thickness per coat. A minimum of two coats are required on vertical surfaces to achieve a total dry film thickness of approximately 300 microns. On horizontal surfaces a minimum of three coats are required to achieve a total d.f.t. of approximately 450 microns.

REINFORCEMENT & ROOF DECKS

Polyester fabric or mesh can be incorporated into the **Elastoclad** film to reinforce the membrane. Reinforcement is recommended for various applications, cracked concrete decks, old sheeted and bitumen membranes and trafficable areas. Apply 1st coat of **Elastoclad** @2.13 m^2/ltr/coat. Once the reinforcement is embedded into the **Elastoclad** 1st coat and dry, apply a minimum of 500 microns D.F.T. of **Elastoclad** over these areas in additional 2 coats.

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On roof decks, balconies etc., **Elastoclad** is reinforced with polyester fabric or mesh embedded into the first coat of **Elastoclad** @2.13 m^2/litre/coat whilst wet. Apply a further coat ensuring there are no bubbles or wrinkles in the reinforcement to completely saturate the reinforcement. Apply an additional 2 coats of **Elastoclad** to achieve a total d.f.t. of approximately 1000 microns (1 mm).
The product will be touch dry in approximately 40 minutes and may be overcoated after 2 hours drying under normal conditions. This can be assessed at the time of application and is influenced by ambient temperature, humidity, airflow and type of surface treated.

GENERAL INFORMATION

Fabric Reinforcement

Fabric reinforcement is required on roofs that have a large amount of cracks, splits, seams, joints etc. These may be individually addressed using **Conflex PS** and **Elastoclothe** if the numbers are limited.

Ponding

Ponding should be avoided on roofs, and good slopes to drains provided, however, **Elastoclad** withstands minor ponding found on many roofs.

Product Life

The life of **Elastoclad** depends on initial applied thickness, UV levels, temperatures, abrasion, foot traffic, rain, ponding & wind. **Elastoclad** will typically wear at a low rate of 10-15 microns per year.
The thickness of **Elastoclad** is related to the required life and anticipated crack widths. The thicker the coating the longer the life and greater the crack bridging capacity.
Typically the coating is installed to last 5-10 years before recoating. It is recommended that the base coat shall be light grey before applying the white top coat as the top coat wears the base coat will eventually show through.

Recoating

Before recoating **Elastoclad** shall be cleaned with water & detergent, high pressure washed off & all necessary repairs made.

Old Systems

Elastoclad can be applied over built up & modified bitumen roofs, cracked and deteriorated concrete roofs, steel roofs and single ply membranes such as EPDM, Hypalon, PVC, Neoprene etc.
Ensure moisture movement is sealed off.

CLEANING

Tools and equipment should be cleaned with water immediately after use.

APPROXIMATE COVERAGE RATES

Elastoclad:	2.8 m^2/litre per coat*
Elastoclad:	2.13 m^2/litre per coat
(with **Elastoclothe** reinforcement)	
Elasto Coat Clear Sealer:	7 m^2/litre per coat
Floorgard Moisture Barrier:	3 m^2/litre per coat
Elastoclad Acrylic Sealer:	12 m^2/litre per coat

The coverage figures are theoretical - due to wastage factors and the variety and nature of possible substrates, practical coverage figures may be substantially reduced.
For profiled steel roofs multiplication factors of 1.2-1.3 are normally required.
* 150 microns dry film thickness.

MAINTENANCE

There are no special requirements for maintenance, any damage identified during normal inspections should be repaired or material replaced as appropriate. Regular maintenance should be carried out & the roof cleaned at least once a year to prevent buildup of dirt, leaves, chemicals, bird dropping & other contaminations that may adversely effect the coating.

SPECIFICATION CLAUSES

Waterproofing membrane for concrete roof slabs and deckings.
Prior to applying **Elastoclad** on flat concrete roof slabs and decking areas initially prepare and prime the substrate in accordance with manufacturer's surface preparation details.
Over the prepared area, apply one coat of **Elastoclad** @2.13 m^2/litre/coat and while still wet embed polyester reinforced fabric or mesh overlapping edges and ends by a minimum of 50 mm. Ensure that all bubbles and wrinkles in the reinforcement are removed prior to further over-coating.
Apply additional coats of **Elastoclad** (min. 2 coats) to provide an additional dry film thickness of approximately 500 microns over the reinforced area. Allow between 2 and 4 hours between coats.
Application shall be by airless spray or roller.

*Note : the total thickness of the system should be approx.1 mm. requiring at least 1.4 litre of **Elastoclad**/m^2 over the reinforced completed system.*

Elastoclad ®

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Decorative waterproofing facade coating.
The decorative waterproofing coating shall comprise a suitable primer system overcoated with **Elastoclad**, a single component elastomeric coating suitable for application by brush, roller or spray. The total dry film thickness of the coating shall be not less than 350 microns and shall be capable of providing carbon dioxide diffusion resistance equivalent to not less than 50 metres of air. It must exhibit a water vapour transmission resistance S D not more than 1.65 metres (Klopfer criterion) and achieve a Class E water permeability when tested to ASTM E514-74.

Waterproofing membrane system for bathroom and wet areas.
Prior to applying **Elastoclad** in wet areas prepare and prime the substrate in accordance with manufacturer's surface preparation details.
Once this has been completed, a fillet of **Conflex PS** polyurethane joint sealant should be applied at the junction of the wall and floor (perimeter seal).

A base coat of **Elastoclad** should be layer and a layer of polyester reinforcing fabric or mesh placed over all joints and where the walls and floor meet. Where subject to flooding reinforcement should be used over the entire area. Apply multiple coats of **Elastoclad** to achieve a dry film thickness of at least 500 microns.

LIMITATIONS

Elastoclad should be applied to sound substrates either new or old. Unsound surfaces must be repaired or removed. Cracks must be detailed.
Elastoclad should not be applied over surfaces containing moisture, insulation that is saturated should be replaced. Existing waterproofing systems left in place must be sealed to avoid moisture movement. To avoid potential bubbling of the system concrete containing moisture should be treated with 2 coats of **Floorgard Moisture Barrier** to a minimum d.f.t. of 300 microns. The concrete's moisture content should be < 4%. All detailing must be attended to prior to the application of **Elastoclad**, it is not designed to bridge expansion joints, and will only crack bridge if applied at the correct coverage rates to accommodate the crack size. **Elastoclad** is not manufactured to seal structural cracks.
Reinforce when subject to light traffic.
Extreme ambient or surface heat temperatures will have a detrimental effect on **Elastoclad** during installation.
Under high temperatures work should be performed early in the morning, late in the day or in shaded sections.
Application under direct sunlight during the heat of the day should be avoided.
Do not use as a vapour barrier coating or over cold storage tanks. Do not apply to uncured concrete or while rain threatens, or at temperatures below or which may fall below 10°C during the drying period.
Elastoclad is not recommended for surfaces subjected to hydrostatic pressure. Protect from rainfall whilst curing.
Elastoclad should only be tiled over after drying for 7 days. For applications where faster turnaround is required, consult Cormix International Limited.

WARRANTIES

Elastoclad warranties are available for five, ten or fifteen year periods. The warranties guarantee the performance of the material against leaks caused by normal weathering. Refer to the individual warranty documents for additional information.

PACKAGING

Elastoclad Acrylic Sealer:	20 litre pails
Elasto Coat Clear Sealer:	20 litre pails
Elastoclad Primer 2:	20 litre pails
Floorgard Moisture Barrier:	20 litre set

STORAGE & SHELF LIFE

All products have a shelf life of 12 months if kept in a dry store.

Storage conditions:
Store in dry conditions at temperatures between 5°C and 30°C in the original, unopened containers.
If stored at high temperatures, the shelf life may be reduced.

Fire:
Elastoclad Clear Sealer is flammable. Keep away from sources of ignition. No smoking. In the event of fire, extinguish with CO_2 or foam. Do not use a water jet.

HEALTH & SAFETY

Elastoclad Primer 2 is acidic and appropriate eye and skin protection must be taken to avoid contact.
Elastoclad is non-flammable and is classified as nonhazardous, however, all manufactured products should be handled with care. If swallowed, do NOT induce vomiting, give a glass of water. If in eyes, hold eyes open, flush with water for at least 15 minutes. If skin contact occurs, remove contaminated clothing and wash skin thoroughly. Do not use solvents on skin. If poisoning occurs, contact a doctor or Poisons Information Centre.

TECHNICAL SERVICE

Cormix International Limited offers a comprehensive range of high performance, high quality products suitable for use within all aspects of the concrete repair and protection industry. In addition, the company offers a technical support package to specifiers, end users and contractors, as well as on-site assistance. 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.

Elastoclad ®

100% ACRYLIC ELASTOMERIC WATERPROOFING AND ANTI CARBONATION COATING

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.
The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

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Elastoclad ® PU(N)

HIGH PERFORMANCE MODIFIED POLYURETHANE LIQUID APPLIED WATERPROOFING MEMBRANE

DESCRIPTION

Elastoclad PU(N) is a high performance, elastomeric, one component, moisture curing hybrid polyurethane coating formulated for use in many situations. **Elastoclad PU(N)** provides a complete joint free waterproofing membrane, replacing the conventional 'hot melt' mastic asphalt and bituminous sheet membrane and felt systems.

Complies to EN1504 Part 9 and EN1504 Part 2.

- Principle 1 : Protection against Ingress (PI).
  Method 1.3 – Surface coating.
  Method 1.8 – Application of membranes.
- Principle 2 : Moisture Control (MC).
  Method 2.3 – Surface coating.
- Principle 8 – Increasing Resistivity (IR).
  Method 8.3 – Overlays or coatings.

USES & ADVANTAGES

Elastoclad PU(N) can be applied to the following surfaces:- Concrete, roofing felt, asbestos sheeting, tiles, galvanized and coated sheeting, slate, clay tiles, plywood decks, cellular glass insulation, MDF boards, sprayed in place PU foam, butyl and polypropylene sheet, lead, zinc, aluminium. Use in wet areas, exposed roofs, roof gardens, domes, terraces, balconies and patios.

Advantages include:-

- One component complete system easy to apply.
- Free from coal tar and bitumen.
- Joint free and seamless system.
- Total adhesion to the substrate. Any Mechanical damage is easily identified and repaired, unlike sheet membranes where water can travel beneath it.
- UV stable does not harden or become brittle.
- Can be applied to vertical surfaces such as roof flashings and walls without dripping or runs.
- Environment friendly. Low VOC.
- High tensile strength and elongation.
- Excellent crack bridging properties.
- Excellent UV resistance, weatherability and colour retention properties.
- No priming required.
- Root resistant.

PROPERTIES AND COMPLIANCE

Form:	Viscous liquid
Density:	1.36 - 1.38
Tensile Strength:	≥ 1 Mpa.
ASTM D412	
Elongation:	≥ 700%*.
ASTM D412	
Shore A Hardness:	50-60
Shore 00 Hardness:	85-90
ASTM D2240	
Crack Bridging:	> 2 mm.*

ASTM C836-84 and ASTM C1305-00

Total Solids:	63% ± 3
Bond Strength:	> 0.5 Mpa
ASTM D4541	
Tear Strength:	> 10 MPa
ASTM D624	
Initial Surface Absorption:	10 min 0.00 ml/m²/sec
BS 1881: Part 5	30 min 0.00 ml/m²/sec
	60 min 0.00 ml/m²/sec
Accelerated Weathering:	No cracking.
ASTM G154	
Standard Colour:	White / Grey / Green / Beige
Low temperature flexibility:	-15ºC
Re-coat interval:	6 hrs.
Full cure:	7 days
Application temperature:	5 to 35ºC
Service temperature:	-20 to 70ºC

Values achieved are subject up to 10% variation.
*At full thickness.

SURFACE PREPARATION

Concrete surfaces to be treated must be dry, clean and free of laitance, dirt, films, paint, coatings, curing compounds, mould oils, or other foreign matter.

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. Horizontal surfaces should preferably have a rough wood float or broom finish.

The compressive strength of the concrete shall be at least 25 Mpa and 1.5 Mpa in tension at time of application.

PRIMING

Elastoclad PU(N) does not require priming. On highly porous surfaces, a priming coat is recommended to seal the pores and consolidate the surface. Use **Elasto - Coat Clear Sealer** as a primer. Apply primer coat @7 m²/litre.

APPLICATION & COVERAGE RATES

Mix the contents of the pail thoroughly prior to application.

A slow speed drill and suitable paddle mixer should be used to avoid the formation of air bubbles.

Elastoclad PU(N) is applied by brush, roller or airless spray, it cures after 24 hrs. to a tough, flexible membrane with exceptional elasticity and physical properties. Full physical properties are achieved after 7 days cure.

Elastoclad PU(N) is applied at between approx. 0.70 ltr/m² depending on the substrate and specification requirements. It will achieve a dry film thickness of approximately 800 microns when applied in two coats at a total of 1.4 ltr/m².

Elastoclad ® PU(N)

HIGH PERFORMANCE MODIFIED POLYURETHANE LIQUID APPLIED WATERPROOFING MEMBRANE

The coating can be applied with a brush, roller or airless spray and shall be applied in a minimum of two coats. The 1st coat shall be allowed to dry completely before the 2nd coat is applied. The 2nd coat shall be applied cross wise to the first coat. Recoat interval is 6 hours. It is recommended to reinforce all corners with scrim. The scrim shall be layed into the first coat whilst it is still wet and covered fully with the second coat.

LIMITATIONS

Elastoclad PU(N) should not be applied over surfaces containing moisture, insulation that is saturated should be replaced. Existing waterproofing systems left in place must be sealed to avoid moisture movement.

To avoid potential bubbling of the system concrete containing moisture should be treated with 2 coats of **Floorgard Moisture Barrier** to a minimum d.f.t. of 300 microns. The concrete's moisture content should be < 4%.

All detailing must be attended to prior to the application of **Elastoclad PU(N)** is not manufactured to seal structural cracks. Reinforce when subject to light traffic.

Extreme ambient or surface heat temperatures will have a detrimental effect on **Elastoclad PU(N)** during installation. Under high temperatures work should be performed early in the morning, late in the day or in shaded sections.

Application under direct sunlight during the heat of the day should be avoided. Protect from rainfall whilst curing.

Long term exposure to sunlight may cause chalking effect on the surface of the applied product.

CLEANING & DISPOSAL

Clean all the tools with water after use. Hardened materials can be removed mechanically. Allow the waste to cure, seal it into a suitable container and bury in landfill.

PACKAGING, STORAGE & SHELF LIFE

Elastoclad PU(N) is packed in 20 ltr pail. Store in dry, cool, ventilated conditions at temperatures between 5°C and 30°C in the original, unopened containers. If stored at high temperatures, the shelf life may be reduced.

The normal shelf life is 12 months in unopened containers stored correctly.

HEALTH & SAFETY

Handle and open container with care. Avoid inhalation or contact with skin, eyes and clothing. Wear suitable protective clothing, gloves and eye protection.

Skin contact : Wash off with plenty of soap or mild detergent and water.

Eye contact : Rinse immediately with plenty of water for at least 15 minutes while lifting the eyelids.

Ingestion : If conscious, immediately rinse mouth thoroughly and give plenty of water. Do not induce vomiting.

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

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ISO 14001 : 2015 verified by Lloyd's Register International.

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Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

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Elastoclad ® HR

A WATERPROOF AND HEAT REFLECTIVE CERAMIC COATING

DESCRIPTION

Elastoclad HR is a 100% acrylic waterproofing and heat reflective coating which is formulated with hollow core ceramic microspheres to dissipate and reflect solar radiation and also provide a long lasting elastomeric waterproof coating. The ceramic coating technology was developed originally for NASA space shuttles during re-entry to the atmosphere, the benefits provided are therefore substantial".

Elastoclad HR complies with the requirements of EN 1504-2 as waterproof coating.

USES & ADVANTAGES

Elastoclad HR may be used on metal roof decks, silos, storage tanks, cold storage facilities, metal wall surfaces and electrical equipment boxes, concrete roofs and walls. Suitable surfaces to apply to include concrete, metals, timber, asbestos cement and brickwork.

Advantages Include:-

- Deadens sound, resists hail damage, and is fungus resistant.
- Can be applied on most common building materials.
- Resistant to chemicals and deterioration from hot weather conditions.
- Non yellowing, abrasion resistant UV stable water-proof coating.
- Reduces radiant heat transmission from external surfaces by up to 92%.
- Reduces dramatically surface temperatures with less stress due to substrate movement and hence longer roof life.
- Safe and easy to use.
- Produces equivalent radiation heat insulation of up to 150 mm. of conventional fibreglass or styrofoam.
- An R rating of 20 in terms of heat gain.
- Temperature in roof space may be reduced by 20°C and result in a 30% decrease in load on an air conditioning system.
- Protects metals from rust corrosion and concrete from carbonation.
- Reduces required size of air conditioning plant in new building or reduces load by 30-40% in old buildings.
- The cured waterproof membrane is elastomeric and can tolerate substrate movement without cracking or flaking.
- Testing has shown that the ceramic coating reduces zincalume temperatures by up to 17°C, colour bond by 22°C, concrete tile surface temperatures by 20°C and can reduce 14°C off white colour bond surfaces.
- Protects metals from rust & corrosion.
- Stabilises rusty steel halting rusting.
- Reduces thermal shock and hence metal fatigue and increases the working life of the roof.
- Suitable for protection against ingress (Principle 1, method 1.3 of EN 1504-9).
- Suitable for moisture control (Principle 2, method 2.3 of EN 1504-9).
- Suitable for increasing the resistivity (Principle 8, method 8.3 of EN 1504-9).

PHYSICAL PROPERTIES

Appearance: Low sheen
Specific gravity : 0.86 ± 0.05
Cure time : 2-4 hours
Volume solids : Approx. 60%
Elongation : 150-200% at 25°C, ASTM D-412
Colour : White, others on request
Water Vapour Permeability: 2.5 x 10^{-5} gm/mm^2/24 hrs
ASTM D1653
Test Performance Data R Value: 20
ASTM C-177
Accelerated Weathering: No sign of thermal degradation
Q.U.V 3000 hrs
ASTM G-53
Water Absorption: 0.001 %
ASTM D570

Thermal Conductivity Comparisons:
The K value of various common building materials is shown below which provides the heat transfer property or the thermal conductivity of the material. The higher the K value the faster heat is transferred through a particular material.

Material	K Value
Copper	386.00
Aluminium	204.00
Steel	54.00
Marble	3.00
Concrete	1.00
Brick	0.70
Asbestos	0.17
Wood	0.11
Elastoclad HR	0.19
Glass Wool	0.04

Reflectance of Roof Materials :

Material	Solar Ref lectance	Temperature of Roof over Air Temp. (°F)
Bright white coating (ceramic, elastomeric) on smooth surface Elastoclad HR	80%	15°
White membrane	70-80%	15-25°
White metal	60-70%	25-36°
Bright white coating(ceramic, elastomeric) on rough surface	60%	36°
Bright aluminum coating	55%	51°
Premium white shingle	35%	60°
Generic white shingle	25%	70°
light brown/grey shingle	20%	75°
Dark red tile	18-33%	62-77°
Dark shingle	8-19%	76-87°
Black shingle or materials	5%	90°

Source : Oak Ridge National Laboratory, Lawrence Berkeley National Laboratory, and the Florida Solar Energy Center.

Elastoclad ® HR

A WATERPROOF AND HEAT REFLECTIVE CERAMIC COATING

SURFACE PREPARATION

CONCRETE - Remove all debris and contaminants from the surface. Optimum preparation will be achieved by high pressure water blasting (1,000 psi). If water blasting is not possible, ensure the substrate is sound and carry out repairs using a polymer modified repair material **Conpatch** from Cormix. Upstands, pipes, penetrations, roof fixing, joints etc. must be detailed and flashing used as appropriate. Ensure there is no moisture trapped in the concrete, if moisture is present dry or apply **Contite Moisture Barrier** at a min. of 300 microns D.F.T. in 2 coats. Allow any repaired areas to cure before coating, prime the entire surface using **Elastoclad Clear Sealer** Primer before applying the **Elastoclad HR**.

METAL - Inspect metal surfaces for any signs of corrosion. Corroded areas must be thoroughly cleaned and mechanically prepared to remove all rust scale and surface contaminants. Apply suitable anti-corrosive metal primer to entire surface area and allow minimum 4 hours to cure e.g. **Congard ST** before top coating.
For metal sheets such as zincalume apply etching primer such as **Elastoclad 160 Primer** before coating.
Proper preparation of the roof deck is essential to the long term performance of any roofing system.
Any concrete and metal roofs with existing asphalt, bituminous or water based coatings must be water jet power-washed or scraped to assure proper adhesion of the **Elastoclad HR** Waterproof Ceramic Coating System. Furthermore, metal roof areas subject to surface rust should be treated with **Congard ST**. This will protect the long term integrity of the affected areas to prevent further rust deterioration.
Metal roofs with loose and defective bolts, screws, and fastener heads must be tightened or replaced and sealed. All loose seams should be secured with additional fasteners or lap screws. Finally, any open seams which remain must be sealed with **Conflex PS** or reinforced with **Elastoclad** and **Elastoclothe** polyester membrane fabric to ensure a strong and durable waterproofing seal protection over areas subject to thermal movement and shearing activity.
Once all fasteners, seams and openings are properly sealed, the metal deck is watertight. The roof should now be coated using **Elastoclad HR**.

APPLICATION

Elastoclad HR may be applied using a brush, roller or airless spray. In some circumstances, particularly if applying by airless spray equipment, the viscosity of **Elastoclad HR** may warrant the addition of 5-10% of water for improved spray viscosity.
In accordance with conventional good coating practices, it is recommended **Elastoclad HR** be applied in 2 coats to avoid pin holing and other imperfections that may result due to surface variations.

RECOMMENDED THICKNESS

The optimal thicknesses are as follows applied in 2 coats. These will also provide long life in various atmospheric conditions.

Surface	Min. DFT
Metal Wall Cladding	300 micron
Metal Roof Deck	500 micron
Cement Wall Render	500 - 700 micron
Concrete Roof Deck	1.0 mm
Asbestos Roof	300 micron

APPROXIMATE COVERAGE RATE

7.45 m^2 per US Gal @ 300 micron DFT (0.51 litre/m^2)
5.59 m^2 per US Gal @ 400 micron DFT (0.67 litre/m^2)
4.47 m^2 per US Gal @ 500 micron DFT (0.85 litre/m^2)
Coverage figures quoted are approximate only and allowance should be made for wastage (3.785 litre = 1 US gallon).

PACKAGING

20 litre plastic pails.

PRECAUTIONS, STORAGE & HEALTH AND SAFETY

Apply only between 5 – 40°C ambient. If temperatures exceed this range contact your technical sales representative. **Elastoclad HR** should be kept tightly sealed and stored in a cool dry place.

SHELF LIFE

12 months if stored correctly in original unopened packaging.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

Cormix International Limited
89 Romklao Rd., Sansab, Minburi, Bangkok 10510
Tel. (66 2) 917 3955-8
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 those 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.

Elastodeck S

HIGH PERFORMANCE ACRYLIC PROTECTIVE & DECORATIVE COATING FOR CONCRETE & MASONRY

DESCRIPTION

Elastodeck S is a single component acrylic copolymer water based protective coating with excellent resistance to aggressive environments. It is available in a range of colours.
Elastodeck S complies with the requirements of EN 1504-2 as protective coating.

USES & ADVANTAGES

Use to protect reinforced concrete structures from attack by atmospheric gases, chloride ions, sulphates, oxygen and water. It may be used on new or existing concrete and masonry structures and is specially suitable in aggressive marine and coastal environments.

Advantages include:-

- Allows water vapour to escape from structure.
- Excellent resistance to UV and long term weathering.
- Highly durable in all climatic conditions.
- Excellent barrier to chloride ions, sulphates, carbon dioxide, oxygen & water.
- Broad range of colours.
- Non toxic.
- Easy clean up.
- No solvents, no pungent smell or hazard.
- Can apply to various substrates including wood.

PROPERTIES

Volume Solids :	50%
Specific Gravity :	1.28 - 1.31
Reduction in chloride ion penetration :	>99%
Freeze/thaw salt scaling :	Unaffected
Chloride ion diffusion :	None after 2 years
accelerated weathering	immersion
Elongation :	>800% at 24°C
Fully dried :	5-7 days

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

SURFACE PREPARATION

The surface must be sound, dry & clean with no contamination. Remove oil, grease, loose particles, moss, algae, surface laitance and any remaining traces of mould oil or curing compounds. The surface may be achieved by lightly grit or water blasting. If water blasting the surface must be dry before application. Where mosses or algae were present the surface should be cleaned with a biocide after cleaning. Before over coating of existing coatings undertake bond tests both existing coating to concrete & **Elastodeck S** to old coating.

All blow holes or minor surface defects should be made good using **Conpatch 300**, honey combs should be repaired with **Conpatch 600**. Repair materials should dry for at least 48 hours depending on climatic conditions before application.

- Suitable for protection against ingress (Principle 1, method 1.3 of EN 1504-9),
- Suitable for moisture control (Principle 2, method 2.3 of EN 1504-9)
- Suitable for increasing the resistivity (Principle 8, method 8.3 of EN 1504-9)

APPLICATION

To achieve the protective properties of **Elastodeck S** ensure that application rates are followed

	Primer	Elastodeck S
Number of Coats	Flood coat	2
Application Rate	7.14 m^2/ltr	3 m^2 / ltr
Wet film thickness	N/A	300 micron/coat
Dry film thickness	N/A	150 micron/coat
Over coating time		
@20°C	2 hours	8 hours
@30°C	90 mins	6 hours

All areas to be protected should be masked with masking tape. Do not apply if the temperature is less than 2°C. The primer should be applied by knapsack spray at 0.4 litres/m^2 in one or two coats and left to dry for at least 2 hours at 20°C before the application of **Elastodeck S**. Do not apply **Elastodeck S** until the primer is dry.
Apply **Elastodeck S** by brush, roller or spray.
Stir the material thoroughly before use, the first coat should be applied using suitable equipment to achieve a uniform coating with a wet film thickness not less than 300 microns.
The first coat should dry before applying the second. Apply the second coat as above to achieve a wet film thickness not less than 300 microns.

CLEANING

Elastodeck S may be removed by using water whilst **Elastodeck S Primer** should be removed with solvents.

LIMITATIONS

Elastodeck S is produced to apply over sound concrete, masonry and wood surfaces. If applied over an existing coating trials should be conducted to ensure compatibility & bond.

Elastodeck S

HIGH PERFORMANCE ACRYLIC PROTECTIVE & DECORATIVE COATING FOR CONCRETE & MASONRY

PACKAGING

20 litre pail.

STORAGE & SHELF LIFE

All products have a shelf life of 12 months if kept stored in original unopened packaging. Store in cool, dry conditions away from sources of heat & flames in the original packaging. If stored at high temperatures or humidity the shelf life may be reduced.

HEALTH & SAFETY

Elastodeck S and primer should be applied with adequate ventilation avoid inhalation of vapours. Wear suitable protective clothing, glasses & eye protection. In confined areas use suitable respiratory protective equipment.

If swallowed do NOT induce vomiting - give a glass of NOT water. If in eyes, hold eyes open, flush with water for at least 15 minutes.

Elastodeck S is non-flammable. **Elastodeck S Primer** is Primer flammable, keep away from sources of ignition. No smoking, in the event of fire, extinguish with CO_2 or foam.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.

Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.

The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.

Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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CORMIX®

(1.6)

Hydrophilic (Swelling) Waterstops

Cormix International Limited ▶ The Construction Chemicals Specialist
89 Romklao Road, Minburi District, Sansab Subdistrict, Bangkok 10510 THAILAND
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Contite ® Waterstop

HYDROPHILIC CONSTRUCTION JOINT WATERSTOP

DESCRIPTION

A flexible hydrophilic natural rubber & bentonite waterstop for construction joints and sealing precast elements that expands on contact with water.
The bentonite in **Contite Waterstop** consists of tightly packed charged microscopic platelets, between and within these platelets there is a separation of charges positive and negative. Water molecules are attracted to the unique structure of positive and negative charges and wedge themselves between the platelets causing them to separate & swell. The hydrated bentonite forms a seal preventing further migration of water. As hydrostatic pressure is increased the platelets compact forming a tighter seal.

USES & ADVANTAGES

Contite Waterstop is used to stop water infiltration through both vertical and horizontal non moving construction joints, irregular surfaces and around penetrations through concrete. It is not intended as an expansion joint sealant. It is designed to replace conventional waterstops in construction joints. The sodium bentonite in **Contite Waterstop** is the key to its success. Bentonite swells and is released (free expansion) when in contact with water blocking pores, capillaries, minor cracks & other paths for water forming a permanent impermeable barrier.

Typical areas of application include:-
Below and above grade structures such as water tanks, waste water treatment plants, tunnels, basements, lift shafts, underground stations, subway systems, man-holes, culverts, reservoirs, potable water treatment plants, swimming pools, canals etc.

Advantages Include:-

- Light weight flexible coils easy to install.
- Eliminates seam welding & split forming associated with PVC/rubber waterbars.
- Butt end joining, continuous waterstop.
- Withstands hydrostatic water head up to 70 metres.
- Forms a positive seal, sealing cracks & small voids.
- May use in potable water tanks. Non toxic.
- Can apply to irregular concrete surfaces. No need to level.
- Compressible and malleable allowing for good contact in precast applications.
- Unaffected by repeated wetting & drying cycles.
- Does not deteriorate lasts life of structure.
- Fast installation.
- Permanently active system.
- Self healing.

TYPICALS PROPERTIES

Complies to REACH Regulations as per Article 33(1), EC 1907/2006

Hydrostatic Head Resistance :	> 70 m
S.G. :	1.6-1.7 ASTM D-71
Wet / Dry Cycling :	No effect
Service Temperatures :	-40ºC to 80ºC
Elongation :	>300%
Colour :	Black
Adhesion to Clean Dry Concrete :	Excellent
Penetration Cone :	40±5 ASTM D-217
Typical Expansion :	>300%
Volatile Matter :	1% max. ASTM D-6
Application Temp. Range :	-23ºC to 52ºC
Service Temp. Range :	-34ºC to 82ºC

Note*

- *Swelling rates 100% indicates original size.*
- *Expansion is related to the quality of water, pH, temperatures, age of material and storage conditions.*
- *Expansion rates vary in salt or contaminated water consult the manufacturer before use. In salt water use **Contite Waterstop S**.*
- *Expansion rate at 23ºC in potable water at 28 days. Specification shown may be changed without notice to improve the product.*
- *Properties are typical under laboratory conditions and do not constitute a specification. Field trials are recommended.*
- *Provide at least 75 mm. concrete cover. Increase cover where light weight or low strength concrete is being used.*
- *Do not use in expansion joints.*

INSTALLATION OF CONTITE WATERSTOP

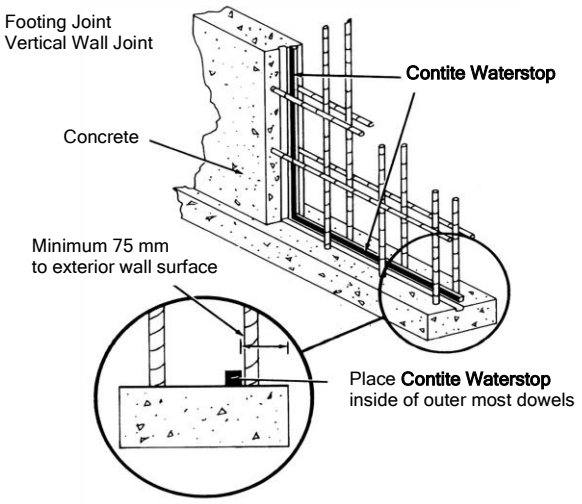
Surface Preparation
The surface should be clean, free of all curing compounds, mould oils, and dry with all dirt, aggregate, rust, debris or standing water removed.

General Installation Instructions
Apply by brush **Contite Waterstop** adhesive along the concrete by the width of **Contite Waterstop**. Whilst still tacky (within 10-15 minutes) apply the **Contite Waterstop**.
Remove the release paper and press the **Contite Waterstop** firmly to the surface for several seconds. At the highest coil end on vertical sections pay particular attention. If the adhesive has dried out reapply to the surface. Mechanical fasteners may be used in conjunction with adhesive. Tightly butt end together to form a continuous waterstop. Do not prehydrate or submerge in water. If severe ground water chemicals or salts exist consult with Cormix International Limited.
Contite Waterstop is not self adhering.

Contite ® Waterstop

HYDROPHILIC CONSTRUCTION JOINT WATERSTOP

DRAWING DETAILS

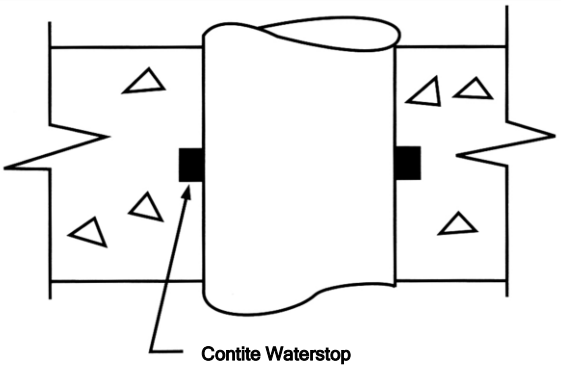


Typical placement of **Contite Waterstop** at concrete construction joints

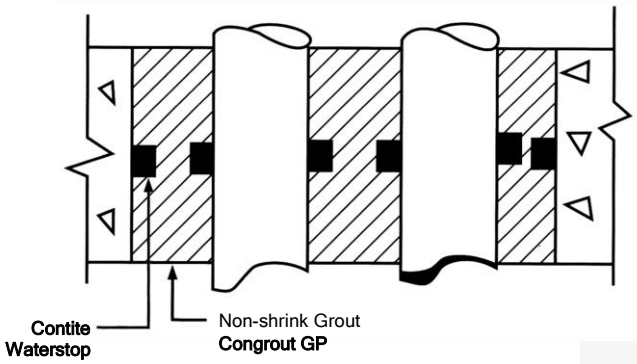
PENETRATIONS

For penetration follow the general installation procedures.

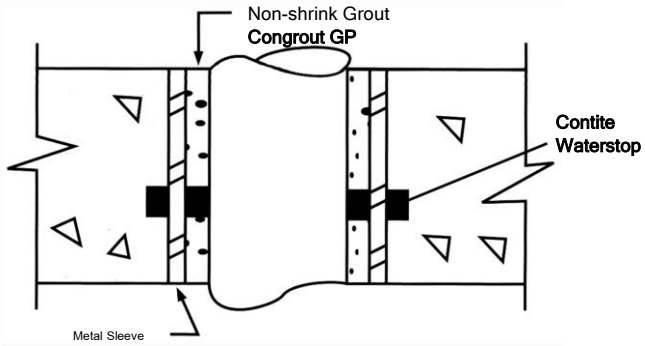
Single Pipe: Install around outer diameter of the pipe.



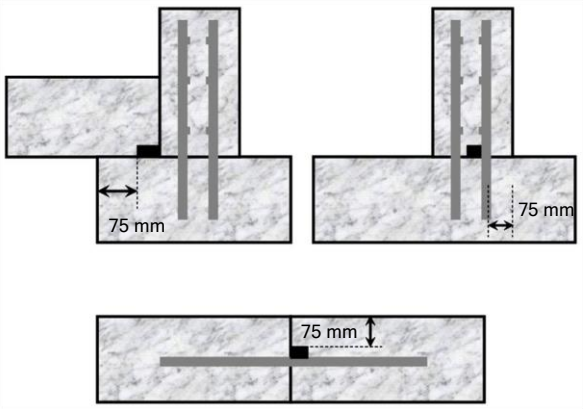
Multiple pipe: install around each pipe as well as around block out box construction.



Sleeved Pipe: Install around the outer diameter of the sleeve. Install another strip between sleeve's inner diameter & the pipe if there is an excessive gap between inner diameter of the sleeve & the pipe 2 separate waterstops may require installing one on the inner diameter & the other on the pipe. The void should be filled with **Congrout GP** non shrink cementitious grout.

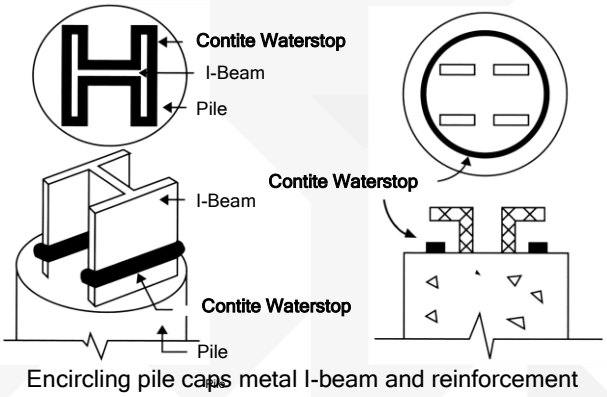


Placement of **Contite Waterstop** (25x20 mm.) at typical construction joints



75 mm minimum concrete coverage

Pile Caps & Grade Beams: Follow the general instructions above. Install to all construction joints around or adjacent to pile caps & grade beams. Install **Contite Waterstop** around pile caps and grade beams above waterproofing.
Wrap around all I-beams extending out of pile cap & encircle reinforcement out of pile cap.

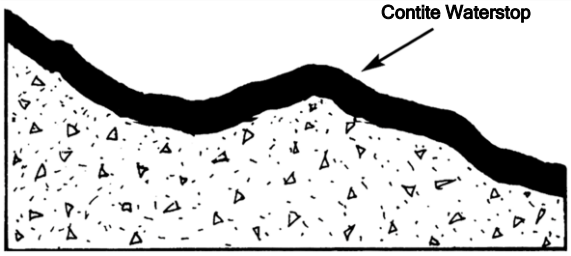


Encircling pile caps metal I-beam and reinforcement

Contite ® Waterstop

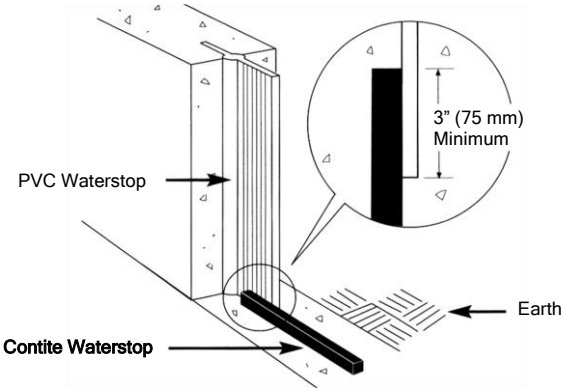
HYDROPHILIC CONSTRUCTION JOINT WATERSTOP

Irregular Concrete Surfaces: Follow general instructions above. Press **Contite Waterstop** against irregular contours filling cavities and cracks do not leave gaps between water bar and surface. It may prove necessary to install in an irregular direction to avoid major depressions or cracks.



Contour Concrete

Joining to PVC Waterstop: Follow general instructions above. Install **Contite Waterstop** on the interior side of the PVC water bar place in direct contact and overlap the PVC water bar by at least 7.5 cm.
For detailed drawings and for conditions not shown below contact Cormix International Limited.



Contite Waterstop Delay Coating
If rain is anticipated before the pouring of concrete **Contite Waterstop** may be protected by **Contite Waterstop Delay Coating**. The delay coating is applied to the surface of **Contite Waterstop** either by brush or spray and will delay swelling for up to several days.

SPECIFICATION

The waterstop to be used in all construction joints shall be **Contite Waterstop** or equal approved material. The waterstop shall consist of sodium bentonite in natural rubber and expand by at least 300%. It shall be capable of being butt ended, shall not be overlapped nor create a packing effect in the concrete, it shall be pliable so that it follows the contours of the concrete and may be installed to all penetrations. The material will form a positive seal, and a continuous waterstop withstanding hydrostatic pressure up to 70 m.

STORAGE & SHELF LIFE

Store dry in original boxes undercover protected from direct sunlight and rain. Do not store at very high temperatures for long periods of time. The shelf life is at least 6 months when stored below 30ºC.

PACKAGING & SIZES

Approximate size :-
25 x 20 mm. x 5.0 LM
6 rolls per carton.
Other sizes available on request.
Primer / Adhesive : 5 litre plastic pails
1 litre per 25-35 LM of standard profile 25x20 mm.
Delay Coating : 5 litre plastic pails
1 litre per 10-12 LM of standard profile 25x20 mm.

HEALTH & SAFETY

There are no known hazards associated with **Contite Waterstop** during normal use. Refer to product material safety data sheet.

LIMITATIONS

Contite Waterstop should only be used in applications where ground water is not contaminated.
In areas where saltwater or organic contaminated water is expected contact Cormix International Limited. for recommendations.
Contite Waterstop should be used in areas fully confined in concrete by a minimum of 75 mm cover. To achieve success the installation instructions must be followed. Any hydrated material allow to dry before placement of concrete.

TECHNICAL SERVICE

The Cormix International Limited 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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

COMPLIANCE

In compliance with the directive 89/106/EEC of the council of European communities of 21 December 1988.

CONTACT DETAILS

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Contite ® Waterstop S

HYDROPHILIC CONSTRUCTION JOINT WATERSTOP FOR SALINE CONDITIONS

DESCRIPTION

Contite Waterstop S is a hydrophilic waterstop for use in saline water conditions that expands when exposed to water sealing concrete joints. It is used in both horizontal and vertical construction joints in cast insitu concrete and produced using natural sustainable materials which do not negatively impact the environment unlike butyl & chloroprene rubber profiles.

USES & ADVANTAGES

Contite Waterstop S is used as a waterstop in construction joints in below and above grade structures such as water tanks, waste water treatment plants, tunnels, basements, lift shafts, underground stations, subway systems, manholes, culverts, reservoirs, potable water treatment plants, swimming pools, canals etc.

The advantages of the product are as follows :-

- Produced from environmentally friendly sustainable materials.
- Light weight flexible coils easy to install.
- Eliminates seam welding & split forming associated with PVC/rubber waterbars.
- Butt end joining, continuous waterstop.
- Withstands hydrostatic head up to 70 metres.
- Forms a positive seal, sealing cracks & small voids.
- Non toxic.
- Can apply to irregular concrete surfaces. No need to level.
- Compressible and malleable allowing for good contact in precast applications.
- Unaffected by repeated wetting & drying cycles.
- Does not deteriorate.
- Fast installation.
- Permanently active system.
- Ecologically safe & can be used in structures in contact with potable water.
- Self healing.
- Excellent bond.
- Can apply in saline conditions.

TYPICAL PROPERTIES

Hydrostatic Head Resistance :	> 70 m
S.G. :	1.6-1.7 ASTM D-71
Wet / Dry Cycling :	No effect
Service Temperatures :	-30ºC to 80ºC
Elongation :	>100%
Colour :	Black other colours Available min. volumes apply
Adhesion to Clean Dry Concrete :	Excellent

Approximate expansion rate in saline conditions :
(100% original size)

	1 Day	7 Days	14 Days
3.5%	120-180%	200-250%	280-300%
7.0%	110-130%	180-200%	240-260%

Note :

- Swelling rates 100% indicates original size by volume.

- Expansion is related to the quality of water, temperatures, age of material and storage conditions.

- Expansion rates vary in salt or contaminated water consult the manufacturer before use.

- Expansion rate at 23ºC in saline water at 28 days. Specification shown may be changed without notice to improve the product.

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

- Provide at least 75 mm. concrete cover. Increase cover where light weight or low strength concrete is being used.

- Do not use in expansion joints.

SURFACE PREPARATION

The surface should be clean, free of all curing compounds, mould oils, and dry with all dirt, aggregate, dust, debris or standing water removed.

General Installation Instructions

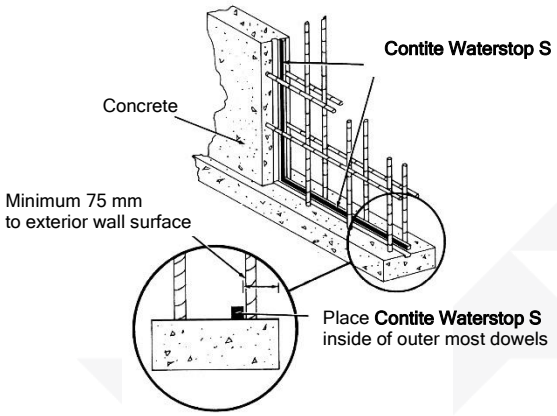
Apply by brush **Contite Waterstop S** adhesive along the concrete by the width of **Contite Waterstop S**. Whilst still tacky (within 10-15 minutes) apply the **Contite Waterstop S**.

Remove the release paper and press the **Contite Waterstop S** firmly to the surface for several seconds. At the highest coil end on vertical sections pay particular attention. If the adhesive has dried out reapply to the surface. Mechanical fasteners may be used in conjunction with adhesive. Tightly butt end together to form a continuous waterstop. If severe ground water chemicals or salts exist consult with Cormix International Limited.

Contite Waterstop S is not self-adhering.

DRAWING DETAILS

Footing Joint Vertical Wall Joint



Typical placement of **Contite Waterstop S** at concrete construction joints

INSTALLATION

- Apply by brush **Contite Waterstop Adhesive** along the concrete by the width of waterstop.
- Remove the release paper and apply **Contite Waterstop S** while adhesive is tacky about 10-15 minutes, press firmly to the substrate.
- Mechanical fasteners or nails can also be used in conjunction with adhesive.

Contite ® Waterstop S

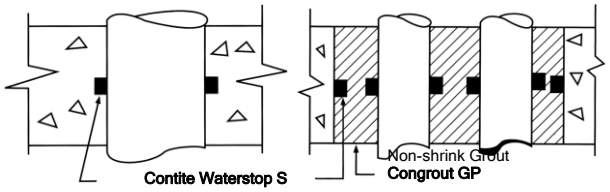
HYDROPHILIC CONSTRUCTION JOINT WATERSTOP FOR SALINE CONDITIONS

PENETRATIONS

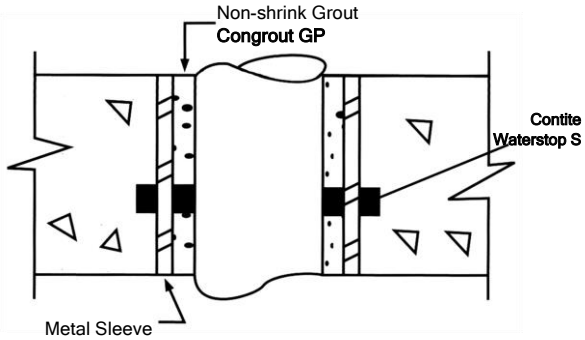
For penetration follow the general installation procedures.

Single Pipe: Install around outer diameter of the pipe.

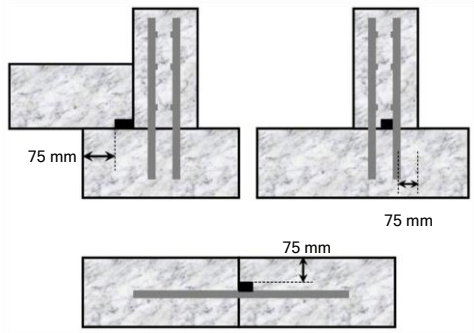
Multiple pipe: install around each pipe as well as around block out box construction.



Sleeved Pipe: Install around the outer diameter of the sleeve. Install another strip between sleeve's inner diameter & the pipe if there is an excessive gap between inner diameter of the sleeve & the pipe 2 separate waterstops may require installing one on the inner diameter & the other on the pipe. The void should be filled with **Congrout GP** non shrink cementitious grout.

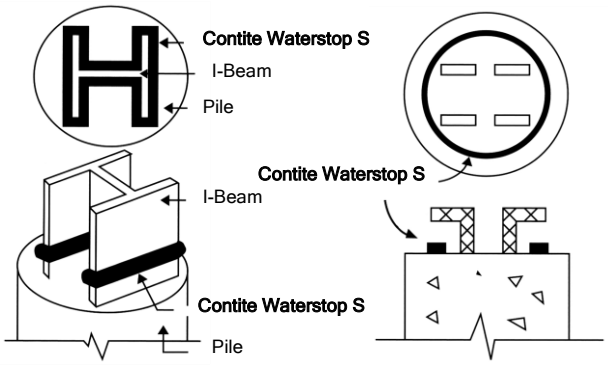


Placement of **Contite Waterstop S** (25x20 mm.) at typical construction joints.



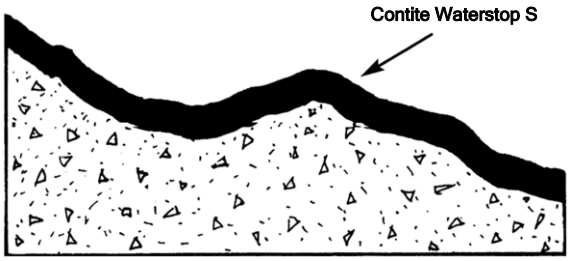
75 mm minimum concrete coverage

Pile Caps & Grade Beams: Install to all construction joints around or adjacent to pile caps & grade beams. Install **Contite Waterstop S** around pile caps and grade beams above waterproofing. Wrap around all I-beams extending out of pile cap & encircle reinforcement out of pile cap.



Encircling pile caps metal I-beam and reinforcement

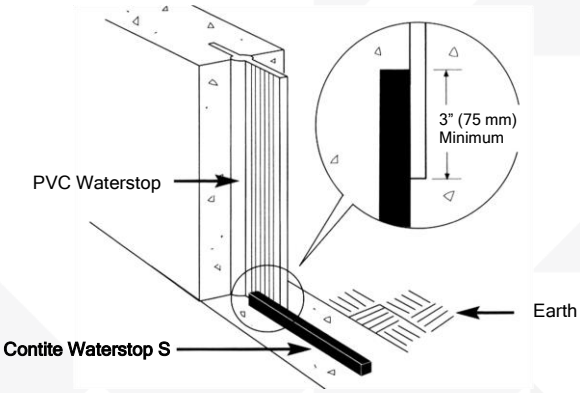
Irregular Concrete Surfaces: Follow general instructions above. Press **Contite Waterstop S** against irregular contours filling cavities and cracks do not leave gaps between water bar and surface. It may prove necessary to install in an irregular direction to avoid major depressions or cracks.



Contour Concrete

Joining to PVC Waterstop: Follow general instructions above. Install **Contite Waterstop S** on the interior side of the PVC water bar place in direct contact and overlap the PVC water bar by at least 7.5 cm.

For detailed drawings and for conditions not shown below contact Cormix International Limited.



Contite ® Waterstop S

HYDROPHILIC CONSTRUCTION JOINT WATERSTOP FOR SALINE CONDITIONS

Contite Waterstop Delay Coating

If rain is anticipated before the pouring of concrete **Contite Waterstop S** may be protected by **Contite Waterstop Delay Coating**. The delay coating is applied to the surface of **Contite Waterstop S** either by brush or spray and will delay swelling for up to several days.

SPECIFICATION

The waterstop to be used in all construction joints shall be **Contite Waterstop S** or equal approved material. The product shall swell in saline water conditions. The waterstop shall consist of sodium bentonite in natural rubber and expand by at least 200% at 7 days in saline conditions. It shall be capable of being butt ended, shall not be overlapped nor create a packing effect in the concrete, it shall be pliable so that it follows the contours of the concrete and may be installed to all penetrations. The material will form a positive seal, form a continuous waterstop and withstand hydrostatic pressure up to 70 m.

PACKAGING & SIZES

Approximate size :-
25 x 20 mm. x 5.0 LM
6 rolls per carton.
Other sizes available on request.
Primer / Adhesive : 5 litre plastic pails
1 litre per 25-35 LM of standard profile 25x20 mm.
Delay Coating : 5 litre plastic pails
1 litre per 10-12 LM of standard profile 25x20 mm.

STORAGE & SHELF LIFE

Store dry in original boxes undercover protected from direct sunlight and rain. The shelf life is at least 6 months.

HEALTH & SAFETY

There are no known hazards associated with **Contite Waterstop S** during normal use. Refer to product material safety data sheet.

LIMITATIONS

Contite Waterstop S should only be used in applications where ground water is not contaminated, in such cases consult with Cormix. **Contite Waterstop S** should be used in areas fully confined in concrete by a minimum of 75 mm cover. To achieve success the installation instructions must be followed. Any hydrated material allow to dry before placement of concrete.

TECHNICAL SERVICE

The Cormix International Limited 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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

Cormix International Limited
89 Romklao Rd., Sansab, Minburi, Bangkok 10510
Tel. (66 2) 917 3955-8
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E-mail : info@cormix.com

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Contite ® Waterstop Adhesive

BONDING AGENT FOR HYDROPHILIC CONSTRUCTION JOINT WATERSTOPS

DESCRIPTION

Contite Waterstop Adhesive is a non-flammable, waterbased adhesive especially formulated to work with **Contite Waterstop** concrete construction joint waterstops.

USES

Contite Waterstop Adhesive is used to secure **Contite Waterstop** to concrete, metal, wood, and PVC surfaces on both vertical and horizontal applications, as well as around through wall mechanical and plumbing penetrations.

TYPICAL PROPERTIES

Appearance :	Milky white
S.G. :	1.01-1.03
p H :	9-10

INSTALLATION

Clean the substrate surface prior to application of **Contite Waterstop Adhesive**.
Roller or brush apply a minimum of 0.1 mm. thick, and at least the width of the chosen **Contite Waterstop** profile over the entire surface length to receive **Contite Waterstop**. Allow to dry for 10-15 minutes, or in damp environments allow a longer period to dry.
After adhesive has dried (become tacky), press the entire length of **Contite Waterstop** firmly onto the adhesive.
Press firmly a minimum of 15 seconds - especially at the highest coil end on vertical applications.

COVERAGE RATE

Application Rate: One pail per 120 - 180 m. at 0.1 mm. thick by 25 mm. width.

LIMITATIONS

Substrate surface must be clean and sound.
Concrete curing compounds should not contain oil, wax or pigments. Do not allow to freeze prior to use.
Any remaining curing compound should be removed by wire brush.

PACKAGING

5 litre plastic pails.

STORAGE & SHELF LIFE

Contite Waterstop Adhesive should be stored protected from sunlight and frost. The shelf life is at least 6 months in original unopened containers.

HEALTH & SAFETY

There are no known hazards associated with **Contite Waterstop** during normal use. Refer to product material safety data sheet

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Rev.005 Aug 2021

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Contite ® Waterstop Delay Coating

DELAY COATING FOR HYDROPHILIC CONSTRUCTION JOINT WATERSTOP

DESCRIPTION

Contite Waterstop Delay Coating is a water based protective delay coating used to stop the premature swelling of **Contite Waterstop** in wet conditions.

USES

Contite Waterstop Delay Coating is used to delay swelling of **Contite Waterstop** for several days in wet conditions.

TYPICAL PROPERTIES

Appearance : Milky white or off white

S.G. : 0.93-0.96

p H : 9-11

Total Solid Content : 60.0-65.0

Day	Swell rate (% by volume)	
	With Delay Coating	Control (Without delay coating
1	No swelling	200%
2	No swelling	255%
3	118%	306%
4	130%	365%
5	143%	500%

INSTALLATION

After installation of **Contite Waterstop**, spray or brush **Contite Waterstop Delay Coating** on 3 sides with a minimum of 0.1 mm. thickness. Allow **Contite Waterstop Delay Coating** to dry for 30 minutes.

COVERAGE RATE

Application Rate: 1 litre per 10-12 LM at 0.1 mm. thick.

LIMITATIONS

Contite Waterstop surface should be clean and dry.

Do not allow to freeze prior to use.

PACKAGING

5 litre plastic pails.
Others pack sizes are available on request.

STORAGE & SHELF LIFE

Contite Waterstop Delay Coating should be stored protected from sunlight and frost. The shelf life is at least 6 months in original unopened containers.

HEALTH & SAFETY

There are no known hazards associated with **Contite Waterstop** during normal use. Refer to product material safety data sheet.

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Rev.007 Jun 2021

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Contite ® Waterbar CTG

EXTRUDIBLE WATER SWELLING PROFILE FOR SEALING CONSTRUCTION JOINTS & PENETRATIONS THROUGH CONCRETE

DESCRIPTION

Contite Waterbar CTG is a gunnable swelling profile which expands when in contact with water. It may be placed on damp or uneven surfaces and used in all kinds of construction joints & to seal penetrations through concrete.

USES & ADVANTAGES

Contite Waterbar CTG is used to seal pipe penetrations, joints between sheet piles, precast concrete joints, **H** beam penetrations, and all types of construction joints including rough surfaces & circular joints.

Advantages include:-

- Easy & fast to install.
- Follows easily irregular surfaces.
- Low application cost.
- Excellent durability against chemicals.
- Excellent swelling rates.
- Excellent adhesion to concrete, steel & p.v.c.

PROPERTIES

Characteristics (Before hardening) JG/T312-2011

Appearance:	Black Paste	
Specific Gravity:	1.35 -1.55	(20ºC)
Squeezability:	4 seconds	(20ºC)
Slump:	0 mm	(35ºC)
Tack free:	10 hrs	(20ºC, 60% RH)

Physical Properties (After hardened) JG/T312-2011

Shore A Hardness :	≥ 20
Tensile Strength :	≥ 0.5 Mpa
Elongation (%) :	≥ 400%
Tensile Bond Strength :	≥ 0.4 MPa

(7 days)

Swelling Capacity in potable water : ≥220%

Swelling rate in salt water will be reduced & delayed

SURFACE PREPARATION

The surface should be cleaned to remove dust, soil, rust, laitance, oil, water or other contaminants.

INSTALLATION

The bead size is controlled by cutting the top of the cartridge. Apply the material so there is no break in the bead.

When new concrete is poured it is recommended that the material has already cured. Keep the material out of contact with water while it is being cured.

CONSUMPTION RATES

The below table provides approximate theoretical consumption rates per 600 cc. cartridge.

Width x Thickness	Length (including loss)
20 mm x 5 mm	3 metres
10 mm x 10 mm	3 metres
15 mm x 5 mm	4 metres
20 mm x 3 mm	5 metres
10 mm x 5 mm	6 metres

The actual consumption rates will vary depending on the roughness of the surface

For general purposes a triangular section with side length of 15 mm is recommended. Bigger or smaller sections may be used depending on site conditions and structures purpose.

PRECAUTIONS

- Do not use in expansion joints or moving joints.
- Store protected from sunlight & moisture.
- In dry conditions volume increases are reversible.
- Protect from rain & avoid expansion before placing of concrete.
- Waterproofing of joints where water levels suddenly increase cannot be guaranteed as **Contite Waterbar CTG** needs time to expand.
- Concrete cover should be at least 7 cm.

Note : Water swelling speed of the material is affected considerably by the shape, thickness, and size, etc. of the profile.
The maximum swelling magnification is affected by the quality of water, the temperature and age of the product.

Contite ® Waterbar CTG

EXTRUDIBLE WATER SWELLING PROFILE FOR SEALING CONSTRUCTION JOINTS & PENETRATIONS THROUGH CONCRETE

PACKAGING

600 ml. sausage.

STORAGE & SHELF LIFE

Stored in unopened, undamaged original packaging at temperatures between 5ºC - 35ºC the shelf life is 12 months from date of manufacture.

HEALTH & SAFETY

During use avoid inhalation of dust & contact with skin & eyes. Wear protective clothing. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately

- **DO NOT** induce vomiting.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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CORMIX
One step ahead

(2)

Injection Systems

CORMIX
One step ahead

(2.1)

Crack Injection and Waterstopping Foams, Resins & Gels

Condur ® SC

LOW VISCOSITY 2 COMPONENT INJECTION RESIN

DESCRIPTION

A two component, low viscosity, injectable high strength epoxy resin to be injected into cracks & cavities in concrete where it cures to a rigid high strength material. **Condur SC** complies with ASTM C881-78 Type 1 Grade 1 Class B + C and BS 6319.

Complies to EN1504 Part 9 and EN1504 Part 5 Class (F)

- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 – Filling Cracks.
- Principle 4 : Structural Strengthening (SS).
  Method 4.5 – Injecting in Cracks, Voids or Interstices.
  Method 4.6 – Filling Cracks, Voids or Interstices.

USES & ADVANTAGES

Condur SC is used as a structural binder to repair cracked and damaged concrete. It has a proven history for use as a structural repair epoxy and bonds tenaciously to concrete and steel.

It can be used for sealing cavities and cracks in structural components such as columns, beams, foundations, decks, and water retaining structures.

It not only forms an effective barrier against water infiltration but also bonds the concrete sections together restoring the original structural strength.

Advantages include:-

- Waterproofs structure.
- Deep penetration.
- Excellent adhesive quality.
- Suitable for both dry & damp conditions.
- High mechanical & adhesive strength.
- Shrinkage free hardening.
- Prevents corrosion of rebar.

Condur SC can also be used as a structural patching repair compound for spalled concrete, as a grouting compound for anchoring bolts and anchors in concrete and as bridge deck nosing compound by mixing with Condur aggregates.

PROPERTIES

Colour:	Yellow to light brown (mixed)	
Viscosity (mixed):	200-300 cPs@ 25°C	
Specific Gravity:	A + B = 1.06 ± 0.02	
Flexural Strength:	≥ 70 N/mm^2	@ 7 days
ASTM C348		
Pot life:	50-70 min	
Compressive Strength:	≥ 60 N/mm^2	@ 7 days
ASTM C579		
Slant Shear Bond Strength (Concrete) :		
ASTM C882	≥ 20 N/mm^2 (Concrete Failure)	@ 14 days
Bond Strength to Steel:	10 - 15 N/mm^2	@ 14 days
ASTM D4541		

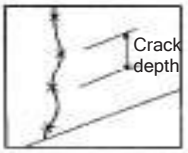
MIXING

Condur SC is supplied in factory proportioned units comprising correct quantities of comp A (resin) and comp B (hardener). Decant all of comp B into comp A and mix thorough for approx. 3 min, still homogenous material achieved. This material is now ready to be injected in horizontal and vertical cracks.

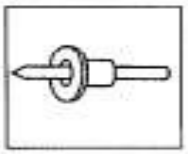
APPLICATION

Several application methods may be used to apply **Condur SC.** We recommend you consult Cormix Technical Service Department for assistance. When used to fill cracks **Condur SC** may be gravity fed (or) pressure injected for horizontal surfaces only pressure injection is suitable for vertical (or) overhead cracks. Crack, should be between 0-5 mm.

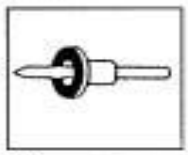
TYPICAL INJECTION



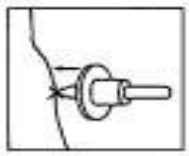
1. Mark position of nipple on concrete surface. (Distance between flange should not be more than depth of crack.)



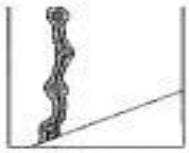
2. Press fixing nail through plastic injection port.



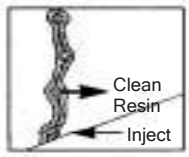
3. Apply **Condur EA1 Paste** epoxy to underside of plastic injection port.



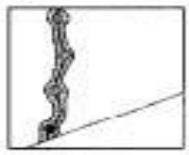
4. Place plastic injection port on position marked in step 1 and press firmly onto concrete.



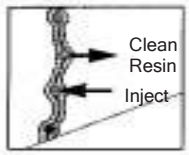
5. Seal flanges and surface of crack with **Condur EA1 Paste**.



6. Inject bottom flange using **Condur SC** until material flows from next flange above.



7. Seal flange.



8. Repeat process working from bottom to top until crack is filled.

9. After curing, remove flanges and grind off crack sealant.

Condur ® SC

LOW VISCOSITY 2 COMPONENT INJECTION RESIN

IMPORTTANT NOTES

The maximum width of a crack to be injected should be no more than 5 mm. The concrete should be at least 3 weeks old. To obtain characteristics stated in the data sheet the mixing ratio must be maintained.

LIMITATIONS

Condur SC should not be used to seal cracks where future movement is expected. Other solutions should be undertaken to rectify this problem e.g. creating a movement joint.

MIX RATIO

A : B = 4 : 1 by weight.
A : B = 3 : 1 by volume.

PACKAGING

Condur SC is supplied in 2 kg. or 20 kg. packs.

STORAGE & SHELF LIFE

Condur SC has a shelf life of 12 months when unopened and stored in a cool, dry environment.

HEALTH & SAFETY

Cormix International Limited recommends that protective clothing, gloves, eye protection and mask be worn.

Condur SC contains resins which upon contact with the skin, may cause irritation. Avoid inhalation of vapour. In case of contact with skin, do NOT use solvent, remove immediately with resin removing cream, followed by soap and water. In the instance of contact with eyes rinse thoroughly with clean water and seek medical advice. In the instance of swallowing, do NOT induce vomiting, seek medical attention.

TECHNICAL SERVICE

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Condur ® SCc

VERY LOW VISCOSITY 2 COMPONENT INJECTION RESIN

DESCRIPTION

A two component, low viscosity, injectable high strength epoxy resin to be injected into cracks & cavities in concrete where it cures to a rigid high strength material. **Condur SCc** complies with ASTM C881-78 Type 1 Grade 1 Class B + C and BS 6319.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (F)

- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 – Filling Cracks.
- Principle 4 : Structural Strengthening (SS).
  Method 4.5 – Injecting in Cracks, Voids or Interstices.
  Method 4.6 – Filling Cracks, Voids or Interstices.

USES & ADVANTAGES

Condur SCc is used as a structural binder to repair cracked and damaged concrete. It has a proven history for use as a structural repair epoxy and bonds tenaciously to concrete and steel.
It can be used for sealing cavities and cracks in structural components such as columns, beams, foundations, decks, and water retaining structures.
It not only forms an effective barrier against water infiltration but also bonds the concrete sections together restoring the original structural strength.
Advantages include:-

- Waterproofs structure.
- Deep penetration.
- Excellent adhesive quality.
- Suitable for both dry & damp conditions.
- High mechanical & adhesive strength.
- Shrinkage free hardening.
- Prevents corrosion of rebar.

Condur SCc can also be used as a structural patching repair compound for spalled concrete, as a grouting compound for anchoring bolts and anchors in concrete and as bridge deck nosing compound by mixing with Condur aggregates.

PROPERTIES

Colour:	Clear to light yellow (mixed)	
Viscosity (mixed):	$\leq$ 100 cPs@ 25°C	
Specific Gravity:	A + B = 1.07 $\pm$ 0.02	
Compressive Strength:	1 day	> 55 N/mm^2
	3 days	> 65 N/mm^2
	7 days	> 70 N/mm^2
Tensile Strength:	7 days	$\geq$ 40 N/mm^2
Flexural Strength:	7 days	$\geq$ 50 N/mm^2
Pot life:	50-70 min	
Bond Strength:		
To Concrete 3-4 N/mm^2	(Concrete Failure)	
To Steel 10 - 15 N/mm^2	(Sand Blasted)	
(35°C, 65% r.H., 10 days)		

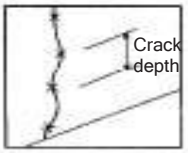
MIXING

Condur SCc is supplied in factory proportioned units comprising correct quantities of comp A (resin) and comp B (hardener). Decant all of comp B into comp A and mix thorough for approx. 3 min, still homogenous material achieved. This material is now ready to be injected in horizontal and vertical cracks.

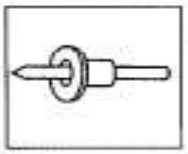
APPLICATION

Several application methods may be used to apply **Condur SCc.** We recommend you consult Cormix Technical Service Department for assistance. When used to fill cracks **Condur SCc** may be gravity fed (or) pressure injected for horizontal surfaces only pressure injection is suitable for vertical (or) overhead cracks. Crack, should be between 0-5 mm.

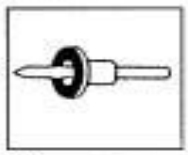
TYPICAL INJECTION



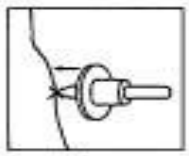
1. Mark position of nipple on concrete surface. (Distance between flange should not be more than depth of crack.)



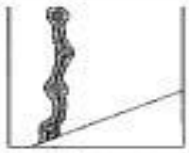
2. Press fixing nail through plastic injection port.



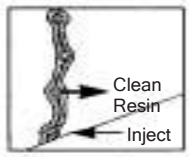
3. Apply **Condur EA1 Paste** epoxy to underside of plastic injection port.



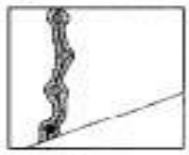
4. Place plastic injection port on position marked in step 1 and press firmly onto concrete.



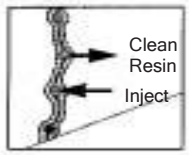
5. Seal flanges and surface of crack with **Condur EA1 Paste**.



6. Inject bottom flange using **Condur SCc** until material flows from next flange above.



7. Seal flange.



8. Repeat process working from bottom to top until crack is filled.

9. After curing, remove flanges and grind off crack sealant.

Condur ® SCc

VERY LOW VISCOSITY 2 COMPONENT INJECTION RESIN

IMPORTTANT NOTES

The maximum width of a crack to be injected should be no more than 5 mm. The concrete should be at least 3 weeks old. To obtain characteristics stated in the data sheet the mixing ratio must be maintained.

LIMITATIONS

Condur SCc should not be used to seal cracks where future movement is expected. Other solutions should be undertaken to rectify this problem e.g. creating a movement joint.

MIX RATIO

A : B = 4.25 : 1 by weight.

PACKAGING

Condur SCc is supplied in 2 kg. or 20 kg. packs.

STORAGE & SHELF LIFE

Condur SCc has a shelf life of 12 months when un-opened and stored in a cool, dry environment.

HEALTH & SAFETY

Cormix International Limited recommends that protective clothing, gloves, eye protection and mask be worn.

Condur SCc contains resins which upon contact with the skin, may cause irritation. Avoid inhalation of vapour. In case of contact with skin, do NOT use solvent, remove immediately with resin removing cream, followed by soap and water. In the instance of contact with eyes rinse thoroughly with clean water and seek medical advice. In the instance of swallowing, do NOT induce vomiting, seek medical attention.

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

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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 those 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.

Contite ® PU100/101

RAPID FOAMING WATER STOPPING MATERIAL

DESCRIPTION

Contite PU100/101 is a one component hydrophobic polyurethane injection grout, when used in conjunction with **Contite PU101** it produces an effective means of stopping water seepage. **Contite PU100** consists of MDI based, solvent free isocyanate component & a special catalyst **Contite PU101**. The system only reacts when it comes into contact with water producing a relatively stiff polyurethane foam.

Complies to EN1504 Part 9 and EN1504 Part 5. Class (S)

- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 – Filling Cracks.

USES & ADVANTAGES

Contite PU100/101 is used to stop water penetration or react away water in cracks, voids or soil.

Hydrophobic injection foams are usually considered as temporary waterstops as far as cracks are concerned. For additional sealing after the waterflow has stopped **Contite PUE200/E201** may be used for elastic sealing or **Contite PUE300/301** for rigid sealing (structural repair).

The unconfined expansion of the foam is up to 30 time's the original volume.

The resin can be injected using a one component pump and if required the reaction time can be adjusted to up to one second by addition of different amounts of **Contite PU101**.

Uses include for:-

- Stopping water seepage.
- Sealing leaking cracks & voids.
- Injection in leaking diaphragm walls.

Typical applications include :- sealing leaks in tunnels, basements, subways, pipe lines, manholes, dams, reservoirs, pools, water tanks etc.

Advantages include:-

- Solvent & filler free.
- Good adhesion to substrate.
- Insignificant shrinkage, stable when cured.
- Controlled expansion reacting away the water no
- "Sponge" effect.
- MDI based safer than TDI types.
- Reaction time may be modified, suitable for stopping seepage to heavy leakage.

PROPERTIES

	Contite PU100	Contite PU101
Colour :	brown	clear
SG : (ASTM D1475)	1.12-1.14	0.93-0.95
Viscosity at 25°C, mPa.s : (ASTM D2196)	50-150	10-20

Pot life : 4-8 hrs when protected from moisture

Density of the mixture : at 25°C (77°F) approx. 1.12 kg/l (9.3 lb/gallon)

Density of the fully cured foam (free foamed) : approx. 30-40 kg/l

Volume expansion : max.1 : 30 (free foamed)

Starting time : approx. 1-10 seconds

Expansion time : approx. 10-20 seconds

Application temp. : +5°C to +50°C

Flash point : > 100°C

INSTRUCTIONS FOR USE

Contite PU100/101 may be used with high or low pressure injection equipment via installed injection packers or similar. To get controlled reaction with the water the gel time can be adjusted by adding **Contite PU101** to **Contite PU100** in accordance with the table below.

Dosage of Contite PU101 in % by weight of Contite	Reaction Time of Contite PU100/ 101	Material Temperature		
		5°C (41°F)	21°C (70°F)	30°C (86°F)
4%	Expansion Start	~ 22 sec	~ 20 sec	~ 20 sec
	Expansion end	~ 95 sec	~ 88 sec	~ 80 sec
6%	Expansion Start	~ 22 sec	~ 18 sec	~ 14 sec
	Expansion end	~ 80 sec	~ 73 sec	~ 60 sec
8%	Expansion Start	~ 14 sec	~ 13 sec	~ 12 sec
	Expansion end	~ 60 sec	~ 52 sec	~ 50 sec
10%	Expansion Start	~ 14 sec	~ 14 sec	~ 11sec
	Expansion end	~ 50 sec	~ 47 sec	~ 40 sec

Note : The given data are laboratory parameters and may deviate depending on the object and conditions on site.

- The starting time is the time at which the mix starts foaming; starting from point 0.
- The expansion time is when the reaction is completed & no further expansion is noted.

Depending on the velocity of running water or the amount of water expected in the crack the gel time should be fixed before injection.

The blended material can be pumped by the use of a single component injection pump equiped for higher pressure to withstand the water pressure.

If cracks or voids are dry flush by injecting with clean water before resin injection.

To prevent condensation on the liquids at the beginning of work the temperature of the components should be at least as high as ambient temperature. All opened drums should be capped when not in use.

Contite ® PU100/101

RAPID FOAMING WATER STOPPING MATERIAL

PACKAGING

Contite PU100 : 20 kg or 2 kg in a can.
Contite PU101 : 2 kg or 200 g in a can.

Other packing units on request.

STORAGE & SHELF LIFE

Store in the shade in dry conditions. Stored in well-sealed drums, in a dry area, at temperatures of 5ºC - 35ºC, the shelf life is approximately 12 months in unopened drums.

HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with waterless cleaner, followed by soap and water. Avoid breathing of vapours; use with adequate ventilation. Please consult our MSDS for more information (available upon request).

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Contite ® PUE200/201

A POLYURETHANE RESIN FOR ELASTIC SEALING OF BOTH DRY & WET CRACKS

DESCRIPTION

Contite PUE200/201 is a two component, solvent and phthalate free, polyurethane system consisting of a resin component **Contite PUE200** and special hardener **Contite PU201.**

The system is ideal for the elastic sealing of cracks in concrete structures as well as areas suffering from water leakage.

USES & ADVANTAGES

Contite PUE200/201 can be used directly into dry & moist cracks, if water leakage must be stopped first.

Contite PUE200/201 can be used in combination with **Contite PU100/101** which will first stop the water and or react the water away after which the injection of **Contite PUE200/201** can be carried out.

Typical areas of use are :-

- The elastic sealing of cracks in concrete structures such as basements, tunnels etc.
- The sealing of cracks and joints and leaks in other structures.
- As injection material for injection hoses.

Advantages include:-

- Good adhesion on wet as well as on dry concrete.
- Low viscosity, therefore a good penetration into the crack.
- Can be applied as one or as two component.
- The curing time can be adjusted relatively simply.
- The cured material is resistant to hydrolysis.
- Cracks can be injected with water before sealing. The advantage is adequate cleaning and a good control of the flow characteristics.

PROPERTIES

	Contite PUE200	Contite PU201
Colour :	Yellow	Dark brown
SG :	1.04-1.06	1.22-1.24
(ASTM D1475)		
Viscosity at 25ºC, mPa.s :	30-60	170-270
(ASTM D2196)		
(at 77ºF, lb/ft.s	0.02-0.04	0.11-0.18)
Pot life at 25ºC (77ºF):	60-70 min	
Gel time at 25ºC (77ºF):	70-90 min	

APPLICATION

Although **Contite PUE200/201** is a two component systems it can be used as a one component.

Used as One Component System

Step 1 : Add the required amount of **Contite PU201** to the **Contite PUE200**.

Step 2 : Mix it thoroughly until a homogeneous mixture has been obtained, which will be the case after about 2 minutes.

Step 3 : The mix can be pumped by means of a single component injection pump. Keep in mind that the gel time of the system is 70-90 minutes at 25ºC (77ºF).

After the injection the pump should be cleaned with **Contite PU Purge** (these product may not contain any water).

In the case of a two component application it is possible to speed up the reacting time to obtain faster curing. For this purpose Cormix supplies a special catalyst, **Contite Cat 42**, to be added to the **Contite PUE200**.

The following table clearly indicates the influence of adding **Contite Cat 42** to the **Contite PUE200** on the gel time of the mixture.

Dosage of Contite Cat42 in % by weight of Contite PUE200	Material Temperature		
	5°C (41°F)	21°C (70°F)	30°C (86°F)
	Reaction Time		
0.00%	~ 90 min	~ 90 min	~ 80 min
0.20%	~ 45 min	~ 40 min	~ 29 min
0.40%	~ 35 min	~ 30 min	~ 18 min
0.60%	~ 25 min	~ 25 min	~ 12 min
0.80%	~ 16 min	~ 15 min	~ 9 min
1.00%	~ 12 min	~ 11min	~ 6 min

Note : The given data are laboratory parameters and may deviate depending on the object and conditions on site.

* To prevent condensation on the liquids at the start of work, the temperature of the components should be at least as high as the ambient temperature.

** All opened drums of **Contite PUE200/201** should be purged with dry nitrogen and capped when not in use.

MIX RATIO

Contite PUE 200 : Contite PU 201 = 5 : 3 by weight.
Contite PUE 200 : Contite PU 201 = 2 : 1 by volume.

MECHANICAL & PHYSICAL PROPERTIES OF THE END PRODUCT

	According to Unit	Value
Elongation at break :	ASTM D638 %	> 20
Shore D hardness :	ASTM D2240	20-30

PACKAGING

16 kg (35 lb) set;
Contite PUE200 = 10 kg (22 lb)
Contite PU201= 6 kg (13 lb) in a can.
Other packing units on request.

Contite ® PUE200/201

A POLYURETHANE RESIN FOR ELASTIC SEALING OF BOTH DRY & WET CRACKS

STORAGE & SHELF LIFE

Contite PUE200/201 are very stable when properly handled.
To avoid problems, it is very important to understand that these materials are both temperature and moisture sensitive. Therefore, materials should be stored in an area with temperatures not exceeding 35ºC (95ºF) or not lower than 5ºC (41ºF), the shelf life is approximately 12 months in unopened drums.
All part used drums should be covered by nitrogen and re-sealed to prevent the ingress of moisture.

HEALTH & SAFETY

Ordinary hygienic principles, such as washing the compounds from the hands before eating or smoking should be observed. Hands should be washed with a waterless cleaner followed by soap and water. Avoid breathing of vapours, prolonged contact with the skin, contact with open breaks in the skin, and ingestion. Use **Contite PUE200/201** with adequate ventilation.

TECHNICAL SERVICE

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Contite®PUE 300/301

A POLYURETHANE RESIN FOR RIGID STRUCTURAL SEALING OF DRY CRACKS

DESCRIPTION

Contite PUE 300/301 is a two component, solvent and phthalate free, polyurethane system consisting of a resin component **Contite PUE 300** and special hardener **Contite PU 301**.
This system is ideal for the structural sealing of cracks in concrete structures.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (F)

- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 - Filling Cracks.
- Principle 4 : Structural Strengthening (SS).
  Method 4.5 - Injecting in Cracks, Voids or Interstices.
  Method 4.6 - Filling Cracks, Voids or Interstices.

USES & ADVANTAGES

Contite PUE 300/301 is applied directly into dry cracks. If water leakage has to be stopped **Contite PUE 300/301** can be used in combination with the **Contite PU100/101**. **Contite PU100/101** will first stop the water and/or react the water away, after which the injection of **Contite PUE 300/301** can be carried out.

Typical areas of use are :-

- The structural sealing of cracks in concrete such as basements, bridges, tunnels, marine structures etc. In areas where dry cracks are present and a structural sealing is needed.

Advantages include:-

- Good adhesion on dry concrete.
- Low viscosity; therefore good penetration into the crack.
- Can be applied as one or two component material.
- The curing time can be adjusted relatively simply.
- The cured material is resistant to hydrolysis.
- Moisture tolerant.

PROPERTIES

	Contite PUE300	Contite PU301
Colour :	light yellow	dark brown
SG : (ASTM D1475)	1.04-1.06	1.22-1.24
Viscosity at 25ºC, mPa.s: (ASTM D2196)	70-120	170-270
(at 77ºF, lb/ft.s	0.047-0.08	0.11-0.18)
Pot life at 25ºC (77ºF) :	40-60 min.	
Gel time at 25ºC (77ºF) :	60-80 min.	
Compressive Strength: (ASTM C579)	> 50 N/mm^2 at 7 days	
Elongation at break : (ASTM D638)	4%	
Shore D hardness : (ASTM D2240)	75-80	

APPLICATION

Although **Contite PUE300/301** is a two component system it can be used as a one component system.

Used as a One Component System.

Step 1 : Add the required amount of **Contite PU301** to the **Contite PUE300**.

Step 2 : Mix it thoroughly until a homogeneous mixture has been obtained, about 2 minutes.

Step 3 : The mix can be pumped by means of a sin-gle component injection pump. The pot life of the system is 40-60 minutes at 25ºC (77ºF).

After the injection the pump should be cleaned with **Contite PU Purge**.

Used as Two Component System

In case a faster curing must be obtained **Contite PUE 300/301** can be applied as a two component system by means of mixing / metering equipment. Due to the low viscosity of the components a simple static mixer can be used.

In the case of a two component application it is possible to speed up the reacting time to obtain faster curing. For this purpose Cormix supplies a special catalyst, **Contite Cat 42**, to be added to the **Contite PUE 300**.
The following table clearly indicates the influence of adding **Contite Cat 42** to the **Contite PUE 300** on the gel time of the mixture.

Dosage of Contite Cat 42 in % by weight of Contite PUE300	Material Temperature		
	5°C (41°F)	21°C (70°F)	30°C (86°F)
	Reaction Time		
0%	~ 62 min	~ 60 min	~ 50 min
0.20%	~ 28 min	~ 27 min	~ 12 min
0.40%	~ 22 min	~ 20 min	~ 10 min
0.60%	~ 12 min	~ 11 min	~ 6 min
0.80%	~ 11 min	~ 8 min	~ 5 min
1.00%	~ 10 min	~ 6 min	~ 3 min

Note : The given data are laboratory parameters and may deviate depending on the object and conditions on site.

After injection the pumps and the mixing head should be cleaned with **Contite PU Purge**.

Note : To prevent condensation on the liquids at the start of work, the temperature of the components should be at least as high as the ambient temperature.
All opened drums of **Contite PUE 300/301** should be capped when not in use.

MIX RATIO

Contite PUE 300 : Contite PU 301 = 1 : 1.15 by weight
or
Contite PUE 300 : Contite PU 301 = 1.02 : 1 by volume

PACKAGING

18.70 kg (41.22 lb) set;
Contite PUE 300 = 8.70 kg (19.18lb)
Contite PU 301 = 10 kg (22.04 lb) in a can.
Other packing units on request.

Contite® PUE 300/301

A POLYURETHANE RESIN FOR RIGID STRUCTURAL SEALING OF DRY CRACKS

STORAGE & SHELF LIFE

Contite PUE300/301 are very stable when properly handled.
To avoid problems, it is very important to understand that these materials are both temperature and moisture sensitive. Therefore, materials should be stored in an area with temperatures not exceeding 35ºC (95ºF) or not lower than 5ºC (41ºF), the shelf life is approximately 12 months in unopened drums.
All part used drums should be resealed to prevent the ingress of moisture.

HEALTH & SAFETY

Ordinary hygienic principles, such as washing the compounds from the hands before eating or smoking should be observed. Hands should be washed with a water less cleaner followed by soap and water. Avoid breathing of vapours, prolonged contact with the skin, contact with open breaks in the skin, and ingestion. Use **Contite PUE 300/301** with adequate ventilation.

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Contite ® PUE 400/E401

A TWO IN ONE POLYURETHANE INJECTION RESIN

DESCRIPTION

Contite PUE 400/E401 is a 2 component hydrophobic polyurethane 2 in 1 injection resin system.
When **Contite PUE 400/E401** comes in to contact with water it reacts rapidly to form flexible foam which stops leakage of water from the concrete crack, if injected in dry conditions it forms a solid elastic resin to permanently seal the crack.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (D)
- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 – Filling Cracks.

USES & ADVANTAGES

Contite PUE 400/E401 is a rapid reacting resin used to stop the water leakage in the short term as well as to form a solid resin for permanent sealing of cracks.
Contite PUE 400/E401 is used to stop water penetration or react away water in cracks, voids or soil. The resin can be injected using a one component pump.

Uses include for:
• Injection to dry wet cracks.
• Stopping water seepage.
• Sealing leaking cracks & voids.
• Injection in leaking diaphragm walls.

Typical areas of use include:-
Sealing leaks in tunnels, basements, subways, pipe lines, manholes, dams, reservoirs, pools, water tanks etc.

Advantages:
• 2 in 1 system: only one product needed at jobsite.
• Simple mix ratio 1:1 by weight and volume.
• Reinjection through the same packers as initial.
• Solvent & filler free.
• Good adhesion to substrate.
• Insignificant shrinkage, stable when cured.
• Controlled expansion reacting away the water no "Sponge" effect.
• MDI based safer than TDI types.

PROPERTIES

	For Part A	For Part B
Appearance :	Light yellow liquid	Dark brown liquid
Viscosity (mPa.s) at 25°C,:	120-150	100-200
Specific gravity :	1.03-1.05	1.13-1.15
	Mixed Material	
Pot life :	15-20 Minutes	
Gel time :	20-40 Minutes	
	Foam Properties	
Reaction time:	Approx. 20-60 seconds	
Expansion time:	Approx. 2 – 5 minutes	
Application temp:	+5°C to +50°C (41°F to 122°F)	
Flash point:	> 100°C (212°F)	

MIX RATIO

Contite PUE 400 : Contite PUE401 = 1:1 by weight.
or
Contite PUE 400 : Contite PUE401 = 1.1:1 by volume.

INSTRUCTIONS FOR USE

Depending on the status of crack, wet or dry the gel time should be fixed before injection. The blended material can be pumped by the use of a single component injection pump equipped for high pressure.
If cracks or voids are dry flush by injecting with clean water before resin injection. To prevent condensation on the liquids at the beginning of work the temperature of the components should be at least as high as ambient temperature. All opened drums should be capped when not in use.

*Note : **Contite PUE 400/E401** is suitable for stopping water leakages. Where water pressure < 1 bar.*

MIXING

Mix part A & B using a slow speed drill and paddle (400 rpm.). Mix the material approx. 2-3 minutes until a homogeneous mixture is formed.

APPLICATION

Contite PUE 400/E401 is used to stop water penetration or react away water in cracks, voids or soil. It is injected as a single component via injection packers into the water bearing zones using a manual pump or electrical injection pump. When in contact with water, the PU foams up strongly and hardens. Inject **Contite PUE 400/E401** until the resin is discharged as foam from the adjoining drill hole or respectively the surface of crack. The follow up injection has to be carried out within the pot life of the initially injected material. (When filling large, wet voids inject in two stages. Waiting time bet-ween the first and second injection is at least 1-2 hours.)

For stopping water leakage:

- For vertical cracks or inclined cracks begin by pumping material into the bottom entry port. Material will react with leaking water forming flexible foam and stop water. Keep injecting until the material appears above the bottom entry. Disconnect and start injection at the above packer.
- For horizontal cracks the injection should proceed from one end of the crack to the other in the same manner.

Contite ® PUE 400/E401

A TWO IN ONE POLYURETHANE INJECTION RESIN

For crack sealing:

- Crack width : 3-10 mm.
- For vertical cracks or inclined cracks begin by pumping material into the bottom entry port. Material will react and for a solid elastic resin to seal the cracks. Keep injecting until the material appears above the bottom entry. Disconnect and start injection at the above packer.
- For horizontal cracks the injection should proceed from one end of the crack to the other in the same manner.

The crack is full if the pressure can be maintained.

PACKAGING

20 kg (44 lb) set; **Contite PUE 400** 10 kg (22 lb) & **Contite PUE 401** 10 kg (22 lb) in steel packaging. Other packing units are available on request.

STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry conditions. Stored in well-sealed drums, in a dry area, at temperatures of 5°C-35°C, the shelf life is approximately 12 months in unopened drums.

HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with cleaner, followed by soap and water avoid breathing of vapours; use with adequate ventilation.

Please consult our MSDS for more information (available upon request).

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Contite ® PUE 500/501

2 PART RIGID POLYURETHANE FOAM FOR SOIL & ROCK CONSOLIDATION AND BELOW GRADE WATER STOPPAGE

DESCRIPTION

A new generation phthalate free high performance low viscosity hydrophobic rigid polyurethane injection grout used to increase the load bearing capacity of loose soils, void filling or underpinning. **Contite PUE 500/501** reacts into either a hard foam or very hard plastic. Reaction times may be adjusted by varying the **Contite PUE 500/501** ratio. **Contite PUE 500/501** does not foam on its own, it needs water present to foam.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (S)

- Principle 4 : Structural Strengthening (SS).
  Method 4.5 – Injecting in Cracks, Voids or Interstices.
  Method 4.6 – Filling Cracks, Voids or Interstices.

USES & ADVANTAGES

Contite PUE 500/501 may be used for soil and rock consolidation, filling of large voids, cracks and crevices, pre injection for waterproofing and consolidation in front of TBM and drill and blast, filling of fissures, gravel layers, in wet and dry conditions.

Advantages Include:-

- Phthalates free resins.
- Solvent free.
- Fast or slow reactions available.
- Easy mixing 1:1 by volume.
- Can be applied in dry or wet conditions.
- Environmentally friendly.
- Expands 20-30 times.
- High strength.
- Non shrink.
- Bonds with soil and concrete.
- Stops repeated water erosion.
- Suitable for long distance injection.

PROPERTIES

	For Part A	For Part B
Appearance:	Yellow	Dark brown
Viscosity: (mPa.s)@25°C	70-120	170-270
SG:	1.04-1.06	1.22-1.25
pH Value:	5.5-6.5	7.0-8.0

Mixed Material	
Appearance:	Light brown
Viscosity:	100-200
Density:	1.13-1.16
pH Value:	6.0-7.0

Foam Properties	
Pot Life:	5 minutes
Reaction Time:	20-30 seconds
Expansion Time:	Approx. 5 minutes
Compressive Strength: ASTM C579	> 40 N/mm^2 at 7 days (with fine sand)
Tensile Strength: ASTM D638	1.5 MPa
Young's Strength: ASTM D638	50 MPa
Foam Density: ASTM D1622	96.8 kg/m^3

Foam Compressive Strength: 0.495 N/mm^2 at 7 days ASTM D1621

(Contite PUE 500/501) + 1% water : Rigid Foam (Less Expansion)
(Contite PUE 500/501) + 5% water : Less Rigid Foam (More Expansion)

MIX RATIO

Contite PUE 500 : Contite PU 501 = 1:1 by volume

APPLICATION

- **Contite PUE500/501** is injected using a 2 component injection machine such as GRACO REACTOR E-30 (plural component proportioner) where the two hoses are connected with an injection gun before injecting into the drilled holes.
- Clean and flush all equipment with **Contite PU Purge** prior to the injection.
- Check the mixing ratio of **Contite PUE 500** and **Contite PU 501** at the GRACO REACTOR by injecting the Part A & Part B under pressure initially, to ensure this is 1:1 mix ratio by volume.
- Fill the machine & hoses with **Contite PUE 500** Part A and **Contite PU 501** Part B and first flush the liquid into waste drums until fresh liquid is observed from the hoses.
- Insert the injection head into the drilled holes.
- Adjust pressure at the GRACO Reactor for Part A and Part B and start the injection, so as to achieve 1:1 mix ratio by volume.
- The injection should be continued until the water flow stops, or until the pre-measured amount of product has been injected in each drilled hole.
- After injecting into the first hole, remove the injection gun & start injecting into adjacent drilled hole situated at 30 cm interval from the previous drilled holes.
- Continue and repeat the injection steps with the adjacent drilled hole.
- When the injection has finished, clean and rinse all equipment with **Contite PU Purge**.
- All opened drums should be capped when not in use.

PACKAGING

400 litres set; available in **Contite PUE 500** 200 litres & **Contite PU 501** 200 litres in 200 litres steel drums. Other packing units are available on request.

STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry conditions. Stored in unopened sealed drums, in a dry area, at temperatures of 5°C-35°C, the shelf life is approximately 12 months.

HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with cleaner, followed by soap and water. Avoid breathing of vapours; use with adequate ventilation. Please consult our MSDS for more information (available upon request).

Contite ® PUE 500/501

2 PART RIGID POLYURETHANE FOAM FOR SOIL & ROCK CONSOLIDATION AND BELOW GRADE WATER STOPPAGE

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Contite ® PUE 700/701

2 PART FAST SETTING RIGID POLYURETHANE FOAM FOR SOIL & ROCK CONSOLIDATION AND BELOW GRADE WATER STOPPAGE

DESCRIPTION

A fast setting phthalate free high performance low viscosity hydrophobic rigid polyurethane injection grout used to increase the load bearing capacity of loose soils, void filling or underpinning. **Contite PUE 700/701** reacts into either a hard foam or very hard plastic.
Contite PUE 700/701 does not need addition of water to foam.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (S)
- Principle 4 : Structural Strengthening (SS).
  Method 4.5 – Injecting in Cracks, Voids or Interstices.
  Method 4.6 – Filling Cracks, Voids or Interstices.

USES & ADVANTAGES

Contite PUE700/701 may be used for soil and rock consolidation, filling of large voids, cracks and crevices, pre injection for waterproofing and consolidation in front of TBM and drill and blast, filling of fissures, gravel layers, in wet and dry conditions.

Advantages Include:-

- Phthalates free resins.
- Solvent free.
- Fast setting.
- Easy mixing 1:1 by volume.
- Can be applied in dry or wet conditions.
- Environmentally friendly.
- Expands 20-30 times.
- High strength.
- Non shrink.
- Bonds with soil and concrete.
- Stops repeated water erosion.
- Faster reaction times than **Contite PUE 500/501**.
- Foams without water.

PROPERTIES

	For Part A	For Part B
Appearance:	Yellow	Dark brown
Viscosity: (mPa.s)@25ºC	70-120	170-270
SG:	1.04-1.06	1.22-1.25
pH Value:	9.0-11.0	7.0-8.0
	Mixed Material	
Reaction Time:	10-20 seconds	
Expansion Time:	Approx. 1-2 minutes	
Compressive Strength: ASTM C579	> 40 N/mm^2 at 7 days (with fine sand)	
Tensile Strength: ASTM D638	1.5 MPa	
Young's Strength: ASTM D638	50 MPa	
Foam Rigidity Time:	< 5 minutes	
Foam Density: ASTM D1622	98.4 kg/m^3	

Foam Compressive Strength: 0.454 N/mm^2 at 7 days ASTM D1621

MIX RATIO

Contite PUE 700 : Contite PU 701 = 1:1 by volume.

APPLICATION

- **Contite PUE700/701** is injected using a 2 component injection machine such as GRACO REACTOR E-30 (plural component proportioner) where the two hoses are connected with an injection gun before injecting into the drilled holes.
- Clean and flush all equipment with **Contite PU Purge** prior to the injection.
- Check the mixing ratio of **Contite PUE 700** and **Contite PU 701** at the GRACO REACTOR by injecting the Part A & Part B under pressure initially, to ensure this is 1:1 mix ratio by volume.
- Fill the machine & hoses with **Contite PUE 700** Part A and **Contite PU 701** Part B and first flush the liquid into waste drums until fresh liquid is observed from the hoses.
- Insert the injection head into the drilled holes.
- Adjust pressure at the GRACO Reactor for Part A and Part B and start the injection, so as to achieve 1:1 mix ratio by volume.
- The injection should be continued until the water flow stops, or until the pre-measured amount of product has been injected in each drilled hole.
- After injecting into the first hole, remove the injection gun & start injecting into adjacent drilled hole situated at 30 cm interval from the previous drilled holes.
- Continue and repeat the injection steps with the adjacent drilled hole.
- When the injection has finished, clean and rinse all equipment with **Contite PU Purge**.
- All opened drums should be capped when not in use.

PACKAGING

400 litres set; available in **Contite PUE 700** 200 litres & **Contite PU 701** 200 litres in 200 litres steel drums. Other packing units are available on request.

STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry conditions. Stored in unopened sealed drums, in a dry area, at temperatures of 5ºC-35ºC, the shelf life is approximately 12 months.

HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with cleaner, followed by soap and water. Avoid breathing of vapours; use with adequate ventilation. Please consult our MSDS for more information (available upon request).

Contite ® PUE 700/701

2 PART FAST SETTING RIGID POLYURETHANE FOAM FOR SOIL & ROCK CONSOLIDATION AND BELOW GRADE WATER STOPPAGE

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CORMIX
One step ahead

(2.2)

Soil Consolidation, Injection & Slab Lifting

Contite ® Soil Stab

A HYDROPHILIC INJECTION GROUT FOR SOIL & ROCK CONSOLIDATION

DESCRIPTION

A two component low viscosity hydrophilic injection grout used for the consolidation of loose sandy soils, sealing of fractures and cracks in hard rock, containment curtain grouting and pre-injection grouting in tunnels.

USES & ADVANTAGES

Use in the consolidation of soils and rock. **Contite Soil Stab** has the following advantages:-

- Adjustable gel time.
- Non flammable.
- Environmentally friendly.
- Low viscosity.
- Can be injected into very small cracks & factures.
- Easily applied through simple mixing & pumping equipment.

PROPERTIES

	For Part A	For Part B
Appearance:	Turbid liquid	Slight yellow liquid
Viscosity:	Approx. 5 mPa,s	Approx. 8 mPa.s.
SG:	1.1-1.2	1.3-1.4

	Mixed Material (25% part B)
Appearance:	Clear liquid
Viscosity:	Approx. 5 mPa.s.
Density:	1.15-1.25

Cured Material

Compressive Strength: 1.5-2 N/mm^2 (20% mixture with sand)

Note : Properties may vary when the product is modified to specific site conditions.

APPLICATION

Contite Soil Stab is used for the consolidation of loose sandy soils and for sealing narrow fractures in hard rock. Soil characteristics should be investigated prior to commencing injection.

Soil injection should be carried out at the lowest possible pressure this is determined by load pressure on the soil, permeability, resin characteristics and injection speed.

Trial injection should be carried out to determine flow rate and the spacing of injection points.

Before injection and installation of injection tubes check for the presence of utilities and ground water, investigate soil & geological composition of the site & test permeability of the soil for water and grout.

Grout Preparation

Recommended equipment: A two component injection pump with variable mix ratio is recommended to use where two hoses are connected with a mixing head before attaching to the injection packers. A single component pump may be used only when the mix ratio of Part A and B is 3:1 and 4:1 by volume i.e. the working time is from 40 minutes to two hours. Do not use with the mix ratio of 1:1 and 2:1 by volume since the gel time is too short to work with a single component pump. Ensure the working time is enough to prevent any clogging.

MIXING

With two component injection pump no separate mixing procedure is required as the machine is equipped with its own mixing head.

To use with a single component pump at the mix ratio 3:1 and 4:1 by volume, mix Part A and Part B by adding material of Part A into Part B. Mix it thoroughly until the mixture becomes homogeneous which will be after about 2-3 minutes. Ensure Part B is fully premixed into Part A before the grout injection

The following gel time can be varied according to specific site conditions.

Mix ratio by volume Part A : Part B	Gel Time (at 25 ºC)
1 : 1	5 minutes
2 : 1	15 minutes
3 : 1	45 minutes
4 : 1	2 hours

INSTALLATION

Increase in temperature of 10ºC will approximately half reaction times.

Contite Soil Stab is injected into the ground via injection packers starting from the lowest depth as needed. Continue the injection with flow rate that allows material to permeate into the ground. The flow rate varies according to soil conditions. The pressure is ideally kept between 3 and 7 bar however may be increased if the soil compaction is too tight to inject the material. Continue injection until the soil condition is improved e.g. the leakage has stopped. Then lift the injection hose up at 30 cm intervals and repeat the above procedure.

In hard rock situations packers are to be inserted into the rock. Into sandy soils a strainer pipe can be used.

CONSUMPTION

Will depend on the compaction of soil & air voids to be filled. The consumption is approximately 1260 kg/m^3 for 100% air void without any sand (or) soil.

Contite ® Soil Stab

A HYDROPHILIC INJECTION GROUT FOR SOIL & ROCK CONSOLIDATION

CLEANING OF EQUIPMENT

All equipment can be cleaned with fresh water.

PACKAGING

Contite Soil Stab

Part A : Available in 1000 L IBC.
Part B : Available in 1000 L IBC.

STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry, well-ventilated conditions. Stored in well-sealed drum, in a dry area, at temperatures of 5ºC-35ºC, the shelf life is approximately 12 months in unopened drums. Do not store near combustible materials.

HEALTH & SAFETY

Part A is alkali and Part B is acidic. Always wear protective clothing, gloves and safety goggles. Use with adequate ventilation.

If in Eyes: Immediately flush eyes and skin with plenty of water for at least 15 minutes, holding lids a part to ensure flushing of the entire surface. Do not rub eyes. Get medical advice immediately.

Skin: Immediately flush skin with soap and water for at least 15 minutes. Also call a physician.

If swallowed/Ingestion: Do not induce vomiting. If a person is conscious and alert give 2-4 cupfuls of milk or water. Consult a physician immediately. Never give anything by mouth to an unconscious person.

Inhalation: Get medical aid immediately. Remove patient from exposure to fresh air immediately.

For spillages: Cleanup immediately cover with sand, dry lime or soda ash and place in a closed container for disposal.

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Contite ® Slab Lift

2 COMPONENT STRUCTURAL POLYURETHANE FOAM FOR CONCRETE SLAB LIFTING AND SOIL STABILISATION

DESCRIPTION

A new generation phthalates free high performance low viscosity hydrophobic structural polyurethane injection grout used to increase the load bearing capacity of loose soils, concrete lifting, void filling or underpinning. **Contite Slab Lift** reacts into either a hard foam or very hard plastic. Reaction times may be adjusted by varying the accelerator ratio.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (S)

- Principle 4 : Structural Strengthening (SS).
  Method 4.5 – Injecting in Cracks, Voids or Interstices.
  Method 4.6 – Filling Cracks, Voids or Interstices.

USES & ADVANTAGES

Contite Slab Lift may be used for concrete slab lifting & soil stabilization by improving load bearing capacity of loose soils, filling of large voids, cracks and crevices.
Typical areas of use include:-
Concrete highways, railroad track slabs, bridge approach slabs, concrete slabs in warehouses, factories, bunded areas, parking bays, aircraft taxiways, filling voids behind pipes, manholes, underpinning of buildings & soil stabilization.

Advantages Include:-

- Phthalates free resins.
- Solvent free.
- Fast or slow reactions available.
- Easy mixing 1:1 by volume.
- Low cost lifting of concrete structures/slabs.
- Can be applied in dry or wet conditions.
- Environmentally friendly.
- Rapid strength gain. Traffic ready in 15 minutes.
- Expands 20-30 times unconfined.
- High strength.
- Non shrink.
- Bonds with soil and concrete.
- Stops repeated water erosion.
- Precision lifting.

PROPERTIES

	For Part A	For Part B
Appearance:	Yellow	Dark brown
Viscosity: (mPa.s)@25ºC	900-1300	170-270
SG:	1.06-1.09	1.22-1.25
pH Value:	9.0-10.5	7.8-8.0

	Mixed Material
Reaction Time:	< 10-15 seconds
Tack Free Time:	< 60 seconds
Fully Cured:	< 15 minutes
Compressive Strength: ASTM C579	> 40 N/mm^2 at 7 days (with fine sand)
Tensile Strength: ASTM D638	1.5 MPa
Young's Strength: ASTM D638	50 MPa
Foam Density: ASTM D1622	116.1 kg/m^3

Foam Compressive Strength: 0.703 N/mm^2 at 7 days ASTM D1621

MIX RATIO

1:1 by volume

APPLICATION

- **Contite Slab Lift** is injected using a 2 component injection pump where the two hoses are connected with a mixing head before attaching to the packers.
- Clean and flush all equipment with **Contite PU Purge** prior to the injection and between each injection step.
- Check the mixing ratio of the pump by start pumping component A and component B and check the volume in a beaker. To ensure this is 1:1 mix ratio by volume.
- Fill the pump with **Contite Slab Lift** Part A and Part B and first flush the liquid into waste drums until fresh liquid is observed from the hoses.
- Connect the injection head to the packer.
- Open valves for Part A and Part B and start the injection.
- The injection should be continued until the water flow stops, slab is lifted sufficiently or until the pre-measured amount of product has been injected in each packer.
- Close the valve and disconnect the packers from the mixing head.
- Continue and repeat the injection steps with the adjacent packer.
- When the injection has finished, clean and rinse all equipment with **Contite PU Purge**.

PACKAGING

400 litres set; available in **Contite Slab Lift Part A** 200 litres & **Contite Slab Lift Part B** 200 litres in 200 litres steel drum.

STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry conditions. Stored in unopened sealed drums, in a dry area, at temperatures of 5ºC-35ºC, the shelf life is approximately 12 months.

HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with cleaner, followed by soap and water. Avoid breathing of vapours; use with adequate ventilation. Please consult our MSDS for more information (available upon request).

TECHNICAL SERVICE

The Cormix International Limited 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.

Contite ® Slab Lift

2 COMPONENT STRUCTURAL POLYURETHANE FOAM FOR CONCRETE SLAB LIFTING AND SOIL STABILISATION

QUALITY ASSURANCE

ISO 9001: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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CONTACT DETAILS

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(3)

Grouting

CORMIX
One step ahead

(3.1)

Cementitious

Congrout ® GP

GENERAL PURPOSE, SHRINKAGE COMPENSATED CEMENT BASED GROUT

DESCRIPTION

Congrout GP is a non-shrink cementitious grout designed for grouting applications where it is necessary to eliminate shrinkage whilst completely filling the gap between the substrate and the base plate. **Congrout GP** was designed for use in local conditions and therefore has extended working times. **Congrout GP** complies to ASTM C1107, Type A.

USES & ADVANTAGES

Congrout GP is a general purpose grout suitable for the following grouting works; cavities, gaps, columns in precast construction cavities, large cavity concrete repair with aggregates.
It may also be used for repairs such as tied holes and honeycombs in trowellable form.

Advantages include:-

- Expansion system eliminates shrinkage in plastic state.
- Non Metallic.
- Only requires addition of water.
- Good early and ultimate strength.
- Low permeability.
- Excellent flowability.
- Use for concrete repair work.
- Chloride free.

PROPERTIES

Appearance:	Grey powder
Bulk Density:	Approx. 1.40-1.50 kg./litre
Minimum gap width:	10 mm.
Yield:	Approx. 74 - 76 x 25 kg/bags/m^3 of grout
Water by weight of Grout:	15.5 - 16 %

Expansion of up to 1% or greater in unset material according to ASTM C940.

Drying shrinkage is compensated for complying with the requirements of ASTM C1107 Type A.

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

SURFACE PREPARATION

Surfaces should be clean sound and free from oil, grease, laitance and loose particles. Metal surfaces should also be clean and free of rust, oil, grease and contaminants.

FORM WORK

The formwork should be watertight. Therefore a joint sealant should be used to close all points where forms meet and also around the bottom and top of formwork.

PRE-SOAKING

The prepared areas should be flooded with water for 3-4 hours prior to the placement of **Congrout GP**. Immediately before the grout is placed all free water should be released from the area to be grouted. There should be NO standing water present when the grout is placed.

MIXING

Congrout GP should be mixed using a suitable mixer. For flowable consistency use a hand drill and paddle with a speed of <400 R.P.M. For large works use a high shear vane grout mixer. Drum mixers are not recommended.
The entire contents of the bag should be added to the pre-measured (3.88-4.00 litres) water while mixing.
DO NOT add more than the maximum water content.

APPLICATION

Ensure the substrate is prepared according to the manufactures recommendations. No free water should be present in the area to be grouted. Ensure that there is sufficient air release holes for entrained air to escape. Mortar should be continuously poured, from one side only, until the gap is completely filled. Maintain continuous head of grout when pouring.

IMPORTANT NOTES

Depending on the volume to be filled, large aggregates, eg. 4-8 mm, 8-16 mm or 16-32 mm may be added to the **Congrout GP** at ratio of between 50-100% by weight. The aggregate should be sound, clean and pre saturated with water. Round aggregates are more suitable than crushed. Vibrate to ensure good com-paction.

CURING

To prevent premature surface drying and crazing, cure exposed areas of grout with **Corcure 90** or other approved method.

PACKAGING

4 Ply. 25 kg. plastic lined bags.

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 12 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Congrout GP is alkaline avoid contact with skin & eyes. Gloves, goggles and dust mask should be worn. Remove from skin with soapy water. Splashes in the eyes should be washed out with copious amounts of clean water and medical attention sought.
Congrout GP is non-flammable.

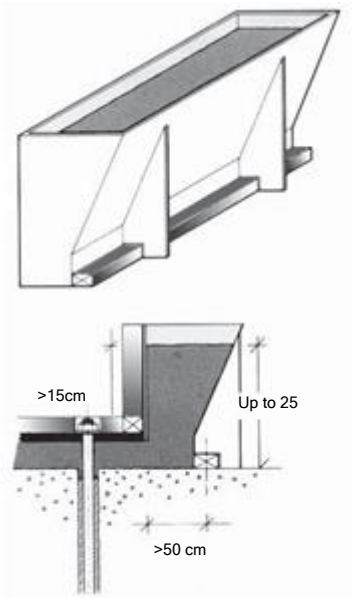
Congrout ® GP

GENERAL PURPOSE, SHRINKAGE COMPENSATED CEMENT BASED GROUT

TYPICAL CHARACTERISTICS AT 28ºC UNDER LABORATORY CONDITIONS

Water Content (%)	Consistency (J rote)	Setting time@28ºC (minutes) ASTM C191-01a/ ASTM C807		Bleeding ASTM C940	Average Compressive Strengths (N/mm^2) - ASTM C109			
		Initial	Final		1 day	3 days	7 days	28 days
15.5 - 16.0	7-12 seconds	300	360	0	≥ 25	≥ 38	≥ 50	≥ 65
13.0 - 14.0	Trowellable	220	270	0	40	45	55	65-70

Typical hopper set up for grouting with Congrout GP



TECHNICAL SERVICE

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Congrout ® 1000

HIGH PERFORMANCE NON SHRINK PRECISION GROUT

DESCRIPTION

Congrout 1000 is a fine precision non shrink, high performance grout with extended working time. **Congrout 1000** complies to ASTM C1107, Type C.

USES & ADVANTAGES

Congrout 1000 uses for the installation of anchor bolts, heavy machinery base-plates, column sole plates, bridge bearings and all areas requiring precision grouting.

Advantages include:-

- Repair work and cavity filling.
- Flowable and self levelling.
- Able to fill intricate voids.
- Ready to use.
- High strength.
- Good dimensional stability.
- No bleeding or segregation.
- Good expansion.
- Compensates for shrinkage in both plastic and hardened state.

PROPERTIES

Appearance: Grey powder
Bulk Density: Approx. 1.56-1.60 kg/litre
Pot life @ 25^{0}C : 5 - 10 minutes
Yield: Approx. 75 x 25 kg/bags/m^3 of grout depending on water content

Expansion of up to 1% or greater in unset material according to ASTM C940.
Drying shrinkage is compensated for complying with the requirements of ASTM C1107 Type C.
Application Temperature: +5ºC - 40 ºC
Service Temperature: -20ºC - 100 ºC

APPROXIMATE FLOW DISTANCES AT 23ºC

	Approx. Flow distance in cm.		
Grout Water cement	Gap Depth mm.	Head Height 10 cm.	Head Height 25 cm.
15% by weight of grout	10	100 cm.	270 cm.
	20	200 cm.	>310 cm.
	30	>300 cm.	>310 cm.
	40	>300 cm.	>310 cm.

Flow distance will be affected by surface conditions, temperature, height of head and mixing time.

SURFACE PREPARATION

Surfaces should be clean, sound and free from oil, grease, laitance and loose particles. Metal surfaces should also be clean & free from rust, oil & grease.

MIXING

Congrout 1000 should be mixed using a suitable mixer. For flowable consistency use a slow speed <400 R.P.M. hand drill and paddle. For large works use a high shear vane grout mixer. Drum mixers may not mix sufficiently.
Powder should be added to the pregauged clean water. For J rote of < 14 seconds approx.15% of water by weight of **Congrout 1000** should be used.
Do not add more than the maximum water content. Mix for up to 5 minutes.

APPLICATION

Ensure the substrate is correctly prepared. No contamination and saturated with water at least 3 - 4 hours prior to pouring the grout. No free water should be left. During application ensure air entrained into the grout is able to escape through relief holes. Maintain continuous head when base-plate grouting. Mortar flow should not be interrupted. Formwork should not allow grout loss.
Ensure there is no water standing in bolt holes. If possible grout anchor bolts first then the mortar bed in a second operation. The distance between anchor bolt and substrate should be at least 3 x max. diameter of mortar aggregates approx. 10 mm. A cable or chain may be used to make sure that all cavities are filled.

IMPORTANT NOTES

Use **Congrout 1000** with minimum gaps of 5 mm. and maximum depths of 150 mm. Temperature will affect setting time and strength gain. Normal curing practice should be maintained.

CURING

To prevent rapid surface drying and crazing, use a suitable curing compound from Cormix's Corcure range **Corcure 90**.

CLEANING

Clean all tools with water immediately after use.

PACKAGING

4 Ply plastic lined bags.
25 kg (13.34 litres) & 20 kg (10.67 litres)

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 12 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Congrout 1000 is alkaline avoid contact with skin & eyes. Gloves, goggles and dust mask should be worn. Remove from skin with soapy water. Splashes in the eyes should be washed out with copious amounts of clean water and medical attention sought.
Congrout 1000 is non-flammable.

Rev.026 May 2025

Congrout® 1000

HIGH PERFORMANCE NON SHRINK PRECISION GROUT

TYPICAL CHARACTERISTICS AT 25°C UNDER LABORATORY CONDITIONS

Water Content (%)	Consistency (J rote)	Setting time@25°C (minutes) ASTM C191/ ASTM C807		Bleeding ASTM C940	Average Compressive Strengths (N/mm^2) - ASTM C109		
		Initial	Final		1 day	7 days	28 days
15	< 14 seconds	240-270	290-320	0	≥ 35	≥ 60	≥ 70

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Congrout ® RES

RAPID STRENGTH CEMENTITIOUS PRECISION GROUT / MORTAR

DESCRIPTION

Congrout RES is a rapid early strength non shrink cementitious grout/mortar. **Congrout RES** provides a flowing grout/mortar with controlled expansion in both wet and hardened states. It should be specified where rapid early strength gain is required. **Congrout RES** complies to ASTM C928.

USES & ADVANTAGES

Congrout RES is used for precision grouting or for repairs of highways, runways & bridge decks where operation is required with a few hours of placing the material.

Advantages include:-

- Hydrogen free gaseous expansion.
- Rapid strength gain.
- Chloride free.
- Excellent durability.
- Excellent flow.
- High strength gain even at low temperatures.
- High ultimate strength.
- Shrinkage compensation in both plastic & hardened state.
- Useable for a wide range of applications and temperatures.
- Flowing grout for gaps 10 mm. to 150 mm.
- No bleeding.
- Non shrink, non toxic and non corrosive.

PROPERTIES

Appearance:	Grey powder
Fresh wet density:	Approx. 2,100 kg./m^3 Depends on consistency
Bond Strength to Concrete: ASTM D4541	> 2.5 N/mm^2 at 28 days (Concrete failure)
Drying Shrinkage: 23ºC C/RH 50% ASTM C490	< 500 micro strain at 28 days
Resistivity:	< 12,000 ohm cm at 28 days

PERFORMANCE PROPERTIE

Water content 14% by weight of **Congrout RES.**

Approx. Compressive Strengths at 30ºC ASTM C109	
Compressive Strength	**Typical Results**
2 hrs	> 25 N/mm^2
4 hrs	> 35 N/mm^2
8 hrs	> 40 N/mm^2
24 hrs	> 50 N/mm^2
28 days	> 65 N/mm^2
Expansion :	1.0-2.0%
Working Time :	Approx. 10-12 mins.
Consistency :	Flowable
Setting time@25ºC ASTM C191-01a / ASTM C807	
Initial	20 minutes
Final	35 minutes

Note: *These are typical figures results may vary depending on water content used, mixing time, and ambient temperatures.*

SURFACE PREPARATION

Surface should be clean, sound and free from oil, grease, laitance and loose particles. Metal surfaces should also be clean & free from rust, oil & grease. Bolt holes or fixing pockets must be cleaned out with blown clean air.

MIXING

Congrout RES should be mixed using a suitable mixer. For flowable consistency use a slow speed < 400 rpm hand drill and paddle. For large works use a high shear vane grout mixer. Drum mixers may not mix sufficiently. For **Congrout RES** use 2.9-3.1 litres of clean water for pourable consistency and 3.3 to 3.5 ltr for flowable consistency. Add grout slowly to the water (add the total bag). Mix continuously for 3 minutes ensuring a smoothe even consistency is obtained.

APPLICATION

Ensure the substrate is correctly prepared, no contamination and saturated with water at least 3 - 4 hours prior to pouring the grout. No free water should be left. Ensure air entrained into the grout is able to escape. Maintain continuous head when base plate grouting. Mortar flow should not be interrupted. Formwork should not allow grout loss. Base plates should be clean and free from oil, grease or scale. Air venting holes should be provided to allow venting in isolated spots. Place the grout within 10 minutes of mixing.

CURING

To prevent rapid surface drying and crazing, use a suitable curing compound from Cormix's Corcure range. e.g. **Corcure 90**.

IMPORTANT NOTES

- Minimum applied thickness of **Congrout RES** is 10 mm. maximum 150 mm.
- Bolt holes should be grouted prior to grouting between substrate and base plate.
- Continuous flow should be maintained with a continuous head of grout.
- At temperatures above 35ºC - 40ºC cooling of water with ice will make handling & placement easier. Mixers & tools should be kept shaded.

CONSUMPTION

For flowable consistency : approx 72-74 bags of 25 kg/m^3 by using 294 litres of water.
For pourable consistency : approx 74-77 bags of 25 kg/m^3 by using 243.6 ltres of water.

CLEANING

Clean all tools with water immediately after use

PACKAGING

25 kg. 4 Ply. plastic lined bags.

Congrout ® RES

RAPID STRENGTH CEMENTITIOUS PRECISION GROUT / MORTAR

STORAGE CONDITIONS & SHELF LIFE

Store in dry shaded conditions. The shelf life is 6 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

During use avoid inhalation of dust & contact with skin & eyes. Wear protective clothing. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately - **do NOT** induce vomiting.

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QUALITY ASSURANCE

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Congrout ® Padding Mortar

PADDING MORTAR

DESCRIPTION

Congrout Padding Mortar is ready to use cementitious mortar for use as dry pack bedding for machine base leveling before grouting.

USES & ADVANTAGES

Congrout Padding Mortar is specifically formulated for bedding & levelling of machine bases before grouting.

Advantages include:-

- No shrinkage and excellent bond to substrate.
- May be used for repairs.
- Manufactured under controlled conditions therefore consistent.
- High early strength which allows for early machine start up.
- Chloride free.

PROPERTIES

Appearance: Grey powder

Bulk Density: Approx. 1.60 kg/litre

Average Compressive Strengths (N/mm^2) ASTM C109						
6 hrs.	10 hrs.	12 hrs.	1 day	3 days	7 days	28 days
≥15	≥25	≥30	≥45	≥65	≥70	≥75

Note: Above data does not constitute a specification performance at temperature 30°C.

SURFACE PREPARATION

Dust, grease, laitance, paint, curing compounds, mould oils and loose material must be removed. Chip the concrete surface to a depth of 20 mm. and width 100 mm. wider than the line plate. After removing the concrete surface clean away dirt & dust. Thoroughly soak the surface with clean water. The recommended height for padding is at least 50 mm.

FORM WORK

Ensure the formwork is tight. Normally the forms should give a top diameter of +40 -20 mm. of the line plate size and botton diameter of +60 - 140 mm. of the liner plate size. The height should be 50 mm.

MIXING

Use 2.5 - 2.75 litres of water to one 25 kg. bag of **Congrout Padding Mortar**. Measure the water accurately. Add the **Congrout Padding Mortar** to the premeasured water slurry & preferably mix with a mechanical mixer until the right consistency is achieved.

Once the required height is achieved place the liner plate on to the mortar surface & beat the liner plate with a wooden hammer. A good bond is achieved by either prewetting the underside of the liner plate or ensuring the surface of **Congrout Padding Mortar** is plastic/wet before the liner plate is installed. Once the height & level is correct the mould can be removed.

CURING

To prevent rapid surface drying and crazing, use a suitable curing compound Cormix's **Corcure 90.**

PACKAGING

25 kg. 4 ply plastic lined bags.

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 12 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Congrout Padding Mortar is alkaline avoid contact with skin & eyes. Gloves, goggles and dust mask should be worn. Remove from skin with soapy water. Splashes in the eyes should be washed out with copious amounts of clean water and medical attention sought.
Congrout Padding Mortar is non-flammable.

TECHNICAL SERVICE

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Congrout ® UWG

A NON SHRINK CEMENT BASED GROUT FOR UNDERWATER APPLICATIONS

DESCRIPTION

Congrout UWG is a non shrink cementitious grout designed for grouting applications where it is necessary to eliminate shrinkage whilst completely filling voids underwater.

Complies to EN1504 Part 9 and EN1504 Part 3

- Principle 3 : Concrete Restoration (CR).
  Method 3.2 – Recasting with Concrete or Mortar.
- Principle 5 : Increase in Physical Resistance (PR).
  Method 5.3 – Adding Mortar or Concrete.

USES & ADVANTAGES

Congrout UWG is designed for use underwater or in tidal zones in areas such as bridge & quay columns, concrete, timber and steel piling, slipways, dams & other underwater structures.

Advantages include:-

- Expansion system eliminates shrinkage in plastic state.
- Non Metallic.
- Only requires addition of water.
- Good early and ultimate strength.
- Low permeability. High durability.
- Excellent flowability.
- Chloride free.
- No significant wash out.

PROPERTIES

Appearance:	Grey powder
Density:	Approx. 2150 kg./m^3
Bond Strength to Concrete:	> 1.5 N/mm^2at 28 days
ASTM D 4541	(Concrete failure)
Submerged Concrete	
Drying Shrinkage is compensated for complying with the requirements of ASTM C1107 Type C	
Expansion:	1-3%
ASTM C940	
Water by weight of grout:	22 % (5.5 Ltr/25 kg bag)
Yield:	14.18 litres/25 kg bag when mixed with 5.5 ltr of water.
Grouting thickness:	min 10 mm. max 150 mm.
Setting Time (water content -22%)	
Initial :	8 hrs
Final :	9 hrs

TYPICAL CHARACTERISTICS AT 23ºC UNDER LABORATORY CONDITIONS

Water Content (%)	Average Compressive Strengths (N/mm^2) ASTM C109 / 109 M		
	1 day	7 days	28 days
22 %	>25	>45	>60

SURFACE PREPARATION

Surfaces should be clean sound and free from oil, grease, laitance and loose particles. Metal surfaces should also be clean and free of rust, oil, grease and contaminants.

FORM WORK

The formwork should be watertight. Therefore, a joint sealant should be used to close all points where forms meet and also around the bottom and top of formwork.

MIXING

Congrout UWG should be mixed using a suitable mixer. For flowable consistency use a hand drill and paddle with a speed of <400 R.P.M. For large works use a high shear vane grout mixer. Drum mixers are not recommended.

The entire contents of the bag should be added to the pre-measured water while mixing.

DO NOT add more than the maximum water content without consulting Cormix.

APPLICATION

Place the grout within 30 minutes of mixing. Ensure there is a continuous flow to prevent trapping air or water. Pour or pump through a flexible pipe at least 50 mm. wide placed at the lowest point of the formwork. Raise the tube gradually as the grout rises. The grout may be poured below water up to 15 cm. thick. For thicker sections clean, saturated aggregates may be added (consult Cormix).

The grout wherever possible should be restrained.

Note : MAI 2 PUMP-PICTOR mortar pump may be used. Refer to method statement for more details.

CURING

Curing is not required if below water. If in tidal zone keep moist.

PACKAGING

20 kg & 25 kg. 4 Ply. plastic lined bags.

Rev.013 Mar 2025

Congrout ® UWG

A NON SHRINK CEMENT BASED GROUT FOR UNDERWATER APPLICATIONS

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 12 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Congrout UWG is alkaline avoid contact with skin & eyes. Gloves, goggles and dust mask should be worn. Remove from skin with soapy water. Splashes in the eyes should be washed out with copious amounts of clean water and medical attention sought.
Congrout UWG is non-flammable.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advice offered.

CONTACT DETAILS

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Congrout ® AF

A PREMIXED CEMENTITIOUS CABLE GROUT

DESCRIPTION

A ready to use high strength premixed flowing non shrink cable grout. Expansion/no shrinkage ensures good interfacial contact is maintained. **Congrout AF** complies to BS EN 447.

USES & ADVANTAGES

Use for the grouting of prestressed cable ducts, bearing plates, tunnel linings, rock & soil anchoring etc.

Advantages include:-

- Flows with low water cement ratio.
- Reduced bleeding.
- Ready to use.
- Non shrink.
- Good expansion.
- Good strength & adhesion.
- Prolonged workability.
- Both non hydrogen & hydrogen forming available.

PROPERTIES

Appearance: Grey powder
Density of Freshly Mixed Grout: Approx. 2 kg/l
Shrinkage: Nil
Chloride Content %: Nil
Typical Strengths:

	Flexural Strength ASTM C348	Compressive Strength ASTM C109
24 hours	2 N/mm^2	$\geq$25 N/mm^2
3 Days	3 N/mm^2	$\geq$30 N/mm^2
7 Days	4 N/mm^2	$\geq$37 N/mm^2
28 Days	5 N/mm^2	$\geq$48 N/mm^2

Flow : Flowing at water cement ratio of 0.35-0.40 J-rote <3 seconds over 2 hours ASTM marsh cone 18 seconds over 2 hours at 0.4 w/c. Flow is effected by temperature and water contents.

Expansion: According to ASTM C-827 an unrestrained expansion of 1-4% is typical. Expansion is effected by temperature and water contents. **Note:** In the non-hydrogen forming material expansion is negligible.

Bleeding: Typically Less than 2% at 3 hours and reabsorption within 24 hours according to ASTM C232.

Workability: 90-120 minutes depending on temperature. **Retention** & W/C

Curing: Cure cubes in plastic bags not water.

Shrinkage: None

SURFACE PREPARATION

Surfaces should be clean, sound and free from oil, grease, laitance and loose particles. Metal surfaces should also be clean & free from rust, oil & grease.

MIXING & APPLICATION

Mixing times and w/c vary according to the application. With standard mechanical mixing for prestressed concrete work, a mixing time of 4 minutes with a w/c of 0.35-0.40 gives the best results.

The best mixing sequence is normally water : **Congrout AF**. Ensure the substrate is correctly prepared. During application ensure trapped air and air entrained into the grout is able to escape through relief holes. Maintain continuous head when grouting. Mortar flow should not be interrupted.

IMPORTANT NOTES

Congrout AF is generally used in the highly specialized work of grouting and prestressing. Properties of **Congrout AF** may be influenced by mixing procedure, adding of water and temperatures. Therefore tests on site should be undertaken.

CLEANING

Clean all tools with water immediately after use.

PACKAGING

20 kg. 4 ply plastic lined bags.

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is 6-9 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Congrout AF is alkaline avoid contact with skin & eyes. Gloves, goggles and dust mask should be worn. Remove from skin with soapy water. Splashes in the eyes should be washed out with copious amounts of clean water and medical attention sought.

Congrout AF is non-flammable.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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CORMIX
One step ahead

(3.2)

Epoxy

Condur ® EGHES

3 COMPONENT HIGH STRENGTH, TEMPERATURE RESISTANT EPOXY GROUT

DESCRIPTION

A solvent free 3 component high strength epoxy grout which when mixed produces a pourable material with excellent adhesion to concrete surfaces.

USES & ADVANTAGES

Condur EGHES is a high early strength epoxy grout produced for speedy and permanent patching repairs of concrete surfaces including small honey combs, surface defects, blow holes and minor damage in roads, bridge decks, runways and precast units.

Advantages include:-

- High early strength.
- Fuel and chemical resistance.
- Fast setting.
- Shrinkage free hardening.
- Rapid hardening.
- High mechanical strength.
- Curing is not affected by high humidity.
- Abrasion & Impact resistant.
- Vibration resistant.
- Strong bond to metal & concrete.

PROPERTIES

Components:	3 (Base, Hardener & Filler)
Form:	Pourable
Appearance:	Grey (when mixed)
Mixed Density (kg/ltr):	2.50 ± 0.05
Working Time:	20 - 30 mins. @25°C
Compressive Strength:	
ASTM C579, Method B	
3 hrs:	≥70 N/mm²
1 day:	≥75 N/mm²
7 days:	≥85 N/mm²
Flexural Strength:	7 days ≥20 N/mm²
ASTM C580	
Bond Strength:	7 days ≥ 2 N/mm²
ASTM D4541	(concrete failure)
Condur EGHES (Base+Hardener)	
Tensile Strength:	7 days ≥25 N/mm²
ASTM D638	
Bond Strength:	7 days ≥ 2 N/mm²
ASTM D4541	(concrete failure)
Chemical resistance	(ASTM D543):
Citric Acid 10%	Excellent
Tartaric Acid 10%	Excellent
Acetic Acid 5%	Satisfactory
Nitric Acid 25%	Good
Hydrochloric Acid 25%	Excellent
Sulphuric Acid 50%	Very good
Sodium Hydroxide 50%	Excellent
Diesel Fuel / Petrol	Very good
Sugar Solutions	Very good
Lactic Acid	Very good
Hydrocarbons	Very good
Phosphoric Acid 50%	Very good
Application Temperature:	5°C to 40°C
Thickness	Min : 10 mm.
	Max : 50 mm

Note:

- *The above data is typical under laboratory conditions @25°C and does not constitute a specification. Field trials are recommended.*
- *The working time starts when the hardener is added to the resin material. Do not let the resin and hardener stand still without adding aggregates which may result in shorter working time.*
- *Working time will vary depending on the temperature and the quantity mixed. To get the optimum working time keep the material shaded and in a cool place.*
- *Strengths are typical of standard mix ratios.*
- *To obtain performance characteristics stated in this data sheet, the mixing ratio must be maintained.*

CHEMICAL RESISTANCE

Condur EGHES resists non oxidising mineral acids and salts, caustics, dilute oxidising acids and salts, plus some organic acids and solvents. Please refer to Cormix International Ltd. for more information.

MIX RATIO

Part A : Part B : Part C = 5 : 1 : 37 by weight.

SUBSTRATE PREPARATION

Surface preparation is important. All surfaces should be dry, clean, free from standing water, grease, curing compounds, mould oils and all loosely adhering particles. Cement laitance should be removed by mechanical means. Roughen surfaces with chipping to ensure good bonding. Steel surfaces should be grit blasted to white metal. Concrete surfaces should be chipped so as to expose aggregates to ensure laitance and weak particles are removed.

PRIMING

For maximum adhesion of heavily filled mortars etc. the surfaces to be treated should be primed by mixing A & B in the packed ratio. Apply with a stiff brush, work in well. For concrete surface with moisture content >4%, use **Condur EA1** as primer.

Alternatively **Condur EA1** can also be used as primer for wet & damp conditions.

Tack free time for **Condur EA1** is approx. 3-4 hours @25°C.

MIXING

Mix component Part A and Part B thoroughly with a slow speed drill for 2 minutes. (Max 400 R.P.M.) Then add Part C and mix for 3 minutes until a homogeneous mortar is achieved.

APPLICATION

Whilst the primer is still tacky pour the material and trowel firmly into place. For large volumes apply in layers ensuring the previous layers have hardened and cooled. Contact Cormix International Ltd. for advise on difficult applications.

- If repairing in multiple layers, it is necessary to sprinkle a small amount of 2.5 mm aggregate over the first layer before the grout reaches its setting time. Before placement of 2nd layer brush out loose aggregates from the 1st pour. Another method is to scrabble gently the top surface and make it rough when grout reaches near to its setting time.

Condur ® EGHES

3 COMPONENT HIGH STRENGTH, TEMPERATURE RESISTANT EPOXY GROUT

FINISHING

A smooth finish may be achieved before the grout reaches its setting time by spraying or brushing the surface with xylene, white spirit or epoxy grade thinner and then by using the steel trowel or wooden trowel level the surface.

CURING

- Cure time will depend on the ambient and substrate temperature. For the best results pour the grout and cure above 12ºC
- The grouts setting time will be delayed and will not achieve the desired properties at temperatures below 5ºC.
- For cold weather grouting please contact Cormix Technical Department for assistance.
- Construct a shelter over the foundation to protect the work area from the elements particularly during cold, wet or very hot conditions.

CLEANING

Clean all tools and equipment immediately with Cormix Cleaner.

IMPORTANT NOTES / SPECIFICATION CLAUSES

The minimum and maximum substrate application temperature should be 5ºC and 40ºC respectively. For additional information contact Cormix International Technical Service Department.

PACKAGING

A+B+C = 30 kg. (Part A = 3.5 kg, Part B = 0.7 kg and Part C = 25.8 kg) premeasured sets or larger packaging is available upon request.

STORAGE & SHELFLIFE

Store in dry conditions between 5-40ºC. The shelf life is 12 months when stored correctly in unopened original containers.

HEALTH & SAFETY

Avoid contact with skin and eyes and avoid breathing vapor. Use only in well ventilated areas away from heat sparks or naked flame. Wear suitable protective clothing, gloves and eye protection when mixing or using. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, do NOT induce vomiting give a glass of water. If in eyes, hold eyes open, flush with water for at least 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water.

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Condur ® EG

3 COMPONENT POURABLE MULTIPURPOSE EPOXY GROUT

DESCRIPTION

A three component pourable epoxy grout based on a high grade epoxy resin and specially graded aggregates. On mixing a flowable grout is produced for use in heavy engineering and difficult conditions. Various grades are available to suite different requirements.

USES & ADVANTAGES

Condur EG is a high strength epoxy grout for use in the petrochemical, oil & gas, power mining & other similiar heavy industries. With no shrinkage, it is suitable for many grouting applications including bridge bearings, machine bases such as pumps, generators, motors, turbines, compressors etc., fixing bolts, anchors, crane rail tracks, reinforcement, and for filling cavities in concrete etc.

Advantages include:-

- Chemical resistance.
- Solvent free.
- Rapid shrinkage free hardening.
- High mechanical strength.
- Curing is not affected by high humidity.
- Good impact and vibration resistance.
- High adjustable flow.
- Good bonding to most substrates.
- Various grades, high strength for elevated temperatures, long pot life for big pours and standard.

PROPERTIES

Component :	3 (Base, Hardener & Filler)
Form:	Pourable
Appearance:	Black (When mixed)
Mixed Density (kg/ltr):	2.1 $\pm$ 0.05
Working Time:	50-60 mins.
Compressive Strength	(ASTM C579)
1 day :	60 N/mm^2
3 days :	70 N/mm^2
7 days :	85 N/mm^2
Flexural Strength @ 7days: (ASTM C 580)	$\geq$ 25 N/mm^2
Tensile Strength @ 7days: (ASTM D 638)	$\geq$ 10 N/mm^2
Bond Strength @ 7days: (ASTM D 4541)	$\geq$ 2.0 N/mm^2 (Concrete Failure)
Yield:	2100 kg/m^3
Application Temperature:	+10 ºC to 40ºC
Service Temperature:	-20 ºC to 80ºC
Linear Shrinkage : (ASTM D 2556)	Negligible
Effective Bearing Area: (ASTM C 1339 Modified)	>95%
Elongation: (ASTM D 638)	1.85%
Water Absorption Coefficient @ 7days: (ASTM C 413)	NIL
Grouting Thickness	Min : 10 mm. Max : 150 mm.
Chemical resistance : (ASTM D543)	Excellent most chemicals

Note:

- *The above data is typical under laboratory conditions at 25ºC and does not constitute a specification. Field trials are recommended.*
- *The working time starts when the hardener is added to the resin material. Do not let the resin and hardener stand still without adding aggregates which may result in shorter working time.*
- *Working time will vary depending on the temperature and the quantity mixed. To get the optimum working time keep the material shaded and in a cool place.*
- *Strengths are typical and may vary according to conditions and*
- *Part C content.*
- *Max depth depends on conditions.*

SUBSTRATE PREPARATION

Foundation Preparation

- Concrete should be old enough, if it is newly placed concrete then it needs to be 21-28 days old and to have reached its design strength.
- Concrete should have attained a minimum compressive strength of 21 MPa, higher strength concrete is recommended for optimum performance of grout.
- All surfaces should be dry, clean, free from standing water, grease, curing compounds, mould oils, all loosely adhered aggregates and cement particles, etc.
- Chip the concrete surface so aggregates are exposed to ensure all laitance and weak particles are removed.
- Alternatively use a spray on surface retarder when placing concrete. The exposed aggregate amplitude should not be greater than 10-15 mm.
- Chamfer the edges of the concrete 45 degrees to 50 mm. width to avoid sharp corners which helps to reduce the potential for cracking.
- If anchor bolt sleeves are to be placed, be sure all water is removed and the void completely dry.
- Shade the foundation from direct sunlight for at least 24 hours before grouting and 48 hrs. after grouting.

Equipment Preparation

- Ensure the surface of base plate to be bonded with grout is free from rust, coatings, wax, oil, grease or scale. Mechanical methods such as grinding, sanding, etc. can be used to remove laitance, scale, etc. to give a sound and clean surface.
- Primers can be used when there is a long delay in cleaning and grouting which could allow rusting and contamination of base plate.

Formwork Preparation

- Before placing the formwork ensure the foundation and equipment is protected from rain or moisture.
- Seal off the areas that will not be grouted.
- Place forms no greater than 70 mm away from the edge of individual base plate or sole plate. However, this may vary depending on the site requirement and application.

Condur ® EG

3 COMPONENT POURABLE MULTIPURPOSE EPOXY GROUT

- Excessive edges/shoulders, may create thermal stress resulting in cracks.
- For long and narrow placements create a headbox to maintain pressure and to enhance proper placement.
- Forms should be liquid tight, they should be sealed with sealant, putty, foam or caulk.
- For long pours it is recommended to install expansion joints at < 1 m spacing in length. This reduces the opportunity for cracking due to the exothermic reaction of the material and differences in linear thermal expansion & contraction between the epoxy grout and concrete.

Deep Pour Recommendations

It is recommended to use dowel or rebar of 9 to 14 mm diameter to minimize stress cracking.

- Grouting should be done in multiple layers when pouring deep sections.
- When pouring deep sections anchor bolts should be used.
- When pouring in multiple layers ensure the previous layer is hardened and cooled.
- Anchor bolts should be installed at spacing < 30 cm. Refer epoxy grouting manual for more details.

MIXING

- Before mixing ensure all the components are cool, shaded and dry. If not preconditioned store all components below 24° C for 24 hrs before using.
- The temperature of grout, baseplate and foundation are more important than the air temperature because they are directly related to the flow of grout.
- Add component A & B in a mixing vessel and mix under slow speed (RPM 400) for approximate 1 minute. Then add component C and continue mixing for 3 minutes until a flowing uniform grout is achieved.
- Avoid excessive mixing which will result in reduction of working time and heat generation.

APPLICATION

- While grouting the base plates ensure there is sufficient pressure head to maintain movement of grout.
- Base plates with a flat base pour the grout from one side through the other across the short dimensions.
- Ensure entrapped air can escape when grouting closed areas.
- Where grout cannot flow or have smooth movement because of the length of pour pushing aids like steel chains, strips of plywood, etc can be used, however, be aware of trapping air.
- The base plate with anchor bolts, dowel, starter bar, etc. should be grouted first followed by the base plate.
- If grouting in multiple layers, it is necessary to sprinkle a small amount of 2.5 mm aggregate over the first layer before the grout reaches its setting time. Before placement of 2nd layer brush out loose aggregates from the 1st pour. Another method is to scrabble. gently the top surface and make it rough when grout reaches near to its setting time.
- Pour should be planned in layers < 12 cm for deep sections.
- Thermal curing should be undertaken for deep sections.
- Pumping is always preferred for large baseplates.

FINISHING

A smooth finish may be achieved before the grout reaches its setting time by using the steel trowel or wooden trowel level the surface.

CURING

- Cure time will depend on the ambient and substrate temperature. For the best results pour the grout and cure above 12°C.
- The grouts setting time will be delayed and will not achieve the desired properties at temperatures below 5°C.
- For cold weather grouting please contact CORMIX Technical Department for assistance.

IMPORTANT NOTES TO ACHIEVE PRODUCT PERFORMANCE

- Do not alter the ratio of resin and hardener. Fillers can be varied as per site requirement.
- Do not thin the grout with solvent or water to make it more flowable.
- Always use a headbox to maintain pressure and the grouts flowability.
- Epoxy based grouts sometimes develop cracks. Cracks are generally caused by thermal stresses, temperature difference, sharp corners and edges, etc. Horizontal edge cracks may occur just below the grout concrete interface especially in outdoor installations. Chamfering the concrete edge helps in reducing such cracks.
- To reduce/prevent curling use dowels or scabble back to expose rebar.
- Following proper installation procedures will reduce the amount of crack development. The procedures contained in this data sheet highlight generally accepted field practices for successful grouting. These may be followed, modified or rejected by the user, however, it is not Cormix's responsibility for planning & understanding the installation appropriate to the conditions. If planned procedures differ from the data sheet contact Cormix Technical Service Department.
- If cracks develop use **Condur SC** (Low viscosity epoxy resin system) to repair the cracks. Consult Cormix.
- Make certain the most current version of the TDS & MSDS are being used by contacting Cormix Customer Service.
- Proper application is the responsibility of the user, field visits by Cormix personnel are for the purpose of making technical recommendations only & not for supervising or providing quality control at the job site.
- Read the Cormix epoxy grouting manual in conjunction with Technical Data Sheet.

Condur ® EG

3 COMPONENT POURABLE MULTIPURPOSE EPOXY GROUT

CLEANING
Clean all tools and equipment immediately with Cormix Cleaner xylene.

PACKAGING
A+B+C 10 Kg (4.76 litres) & 25 Kg (11.9 litres). Pre-measured sets or larger packaging upon request.

STORAGE & SHELF LIFE
Store in dry conditions between 5ºC - 30ºC. The shelf life is 12 months when unopened and stored correctly.

HEALTH & SAFETY
Avoid contact with skin and eyes and avoid breathing vapour. Use only in well ventilated areas away from heat sparks or naked flame. Wear suitable protective clothing, gloves and eye protection when mixing or using. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **do NOT** induce vomiting give a glass of water. If in eyes, hold eyes open, flush with water for at lease 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water.

TECHNICAL SERVICE
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Condur ® EGLP2

A 2 COMPONENT HIGH STRENGTH, LOW EXOTHERM & LONG POTLIFE EPOXY GROUT

DESCRIPTION

Condur EGLP2 is a two component, high performance, 100% solids, solvent free, epoxy grout system. It is designed to exhibit high strength, long potlife and low exotherm during reaction enabling it to be used in mass grouting and large volume placements.

USES & ADVANTAGES

Condur EGLP2 can be used for grouting heavy machinery base plates, compressors, crane rails, rail tracks, generators, turbines, bridge bearing, steel column base plates, re-profiling and waterproofing pile heads, etc. It is used as the best media to transfer dynamic load effectively. Applications include with high speed turbines, reciprocating machinery and in areas requiring good chemical resistance. Due to its low exotherm, it is the ideal product for chemical plants, refineries, and the oil & gas industries where thick pours are to be made without causing stress cracks often associated with high exotherm epoxy grouts.

Advantages include:-

- Low exotherm with high early mechanical strength development.
- Long working time, easy to handle and place.
- Single deep pour up to 300mm.
- Free flow enables for long pours more than 2 m.
- Good chemical resistance.
- Precision alignment under dynamic load conditions.
- Unaffected by high humidity.
- Good bonding to most substrates.
- Adjustable flow at various conditions.
- Low shrinkage allows final leveling of machine base plates and complete surface contact & bond.
- Prepacked, ready to use.
- Good impact and vibration resistance.
- Excellent flow properties.
- 2 part giving better quality control during mixing & reduced bubbles.
- High compressive, tensile & flexural strengths.

PROPERTIES

Components:	2 (Base & Hardener)
Form:	Flowable
Appearance:	Black (when mixed)
Mixed Density (kg/ltr):	2.00
Working Time:	90 mins.
Compressive Strength (ASTM C579)	
1 day @25ºC :	>55 N/mm^2
7 days @25ºC :	>90 N/mm^2
28 days post cure@60ºC :	Approx.110 N/mm^2
Flexural Strength @ 7days:	31 N/mm^2
(ASTM C580)	
Tensile Strength @ 7days:	15.5 N/mm^2
(ASTM D638)	
Bond Strength @ 7days:	≥ 3 N/mm^2
(ASTM D4541)	(Concrete Failure)
Application Temperature:	+10 ºC to 40 ºC
Service Temperature:	-20 ºC to 100 ºC
Linear Shrinkage:	Negligible
(ASTM D2556)	
Effective Bearing Area:	≥95%
(ASTM C1339) modified	
Elongation:	1.75%
(ASTM D638)	
Water Absorption Coefficient @ 7days:	
(ASTM C413)	NIL
Grouting Thickness Min :	10 mm.
Max :	300 mm.
Chemical resistance :	Excellent most chemicals
(ASTM D543)	

Note:

- *The above data is typical @25ºC under laboratory conditions and does not constitute a specification. Field trials are recommended.*
- *The working time starts when the hardener is added to the base material.*
  Working time will vary depending on the temperature and the quantity mixed. To get the optimum working time keep the material shaded and in a cool place.

SUBSTRATE PREPARATION

Foundation Preparation

- Concrete should be old enough, if it is newly placed concrete then it needs to be 21-28 days old and to have reached its design strength.
- Concrete should have attained a minimum compressive strength of 21 MPa, higher strength concrete is recommended for optimum performance of grout.
- All surfaces should be dry, clean, free from standing water, grease, curing compounds, mould oils, all loosely adhered aggregates and cement particles, etc.
- Chip the concrete surface so aggregates are exposed to ensure all laitance and weak particles are removed. Alternatively use a spray on surface retarder when placing concrete. The exposed aggregate amplitude should not be greater than 10-15 mm.
- Chamfer the edges of the concrete at 45 degrees at least 150 mm radius to avoid sharp corners, refer epoxy grouting manual.
- If anchor bolt sleeves are to be placed, be sure all water is removed and the void completely dry.
- Shade the foundation from direct sunlight for at least 24 hrs before grouting and 48 hrs after grouting. Refer epoxy grouting manual for more details.

Equipment Preparation

- Ensure the surface of base plate to be bonded with grout is free from rust, coatings, wax, oil, grease or scale. Mechanical methods such as grinding, sanding, etc can be used to remove laitance, scale, etc to give a sound and clean surface.
- Primers can be used when there is a long delay in cleaning and grouting which could allow rusting and contamination of base plate.

Condur ® EGLP2

A 2 COMPONENT HIGH STRENGTH, LOW EXOTHERM & LONG POTLIFE EPOXY GROUT

Formwork Preparation

- Before placing the formwork ensure the foundation and equipment is protected from rain or moisture.
- Seal off the areas that will not be grouted.
- Place forms no greater than 70 mm away from the edge of individual base plate or sole plate. Refer epoxy grouting manual.
- Shoulder width should be less than Depth of grouting.
- Excessive edges/shoulders may create thermal stress resulting in cracks.
- Chamfers installed on forms at 45° as per epoxy grouting manual.
- For long and narrow placements create a header box to maintain pressure and to enhance proper placement Pumps preferred.
- Forms should be liquid tight, they should be sealed with sealant, putty, foam or caulk.
- Expansion joints should be installed through depth of grout < 1 m spacing.

Deep Pour Recommendations

It is recommended to use dowel or rebar of 9 to 14 mm diameter to minimize stress cracking.

- Grouting should be done in multiple layers when pouring deep sections.
- When pouring deep sections anchor bolts should be used.
- When pouring in multiple layers ensure the previous layer is hardened and cooled.
- Anchor bolts should be installed at spacing < 30 cm. Refer epoxy grouting manual for more details.

MIXING

- Before mixing ensure all the components are conditioned below 24°C as per epoxy grouting manual.
- The temperature of grout, baseplate and foundation are more important than the air temperature because they are directly related to the flow of grout.
- Pour the contents of the hardener pack into the base and mix under slow speed (RPM 400) continue mixing until a flowing uniform grout is achieved. (about 3 minutes)
- Avoid excessive mixing which will result in excessive air bubbles, reduction of working time and heat generation.
- Refer epoxy grouting manual for more details.

APPLICATION

- While grouting the base plates ensure there is sufficient pressure head to maintain movement of grout.
- Base plates with a flat base pour the grout from one side through the other across the short dimensions.
- Ensure entrapped air can escape when grouting closed areas.
- Where grout cannot flow or have smooth movement because of the length of pour pushing aids like steel chains, strips of plywood, etc. can be used, however, be aware of trapping air.
- The base plate with anchor bolts, dowel, starter bar, etc should be grouted first followed by the base plate.
  If grouting in multiple layers, it is necessary to sprinkle a small amount of 2.5 mm aggregate over the first layer before the grout reaches its setting time. Before placement of 2nd layer brush out loose aggregates from the 1st pour. Another method is to scrabble gently the top surface and make it rough when grout reaches near to its setting time.
- Pour should be planned in layers < 12 cm for deep sections.
- Thermal curing should be undertaken for deep sections.
- Pumping is always preferred for large baseplates.

FINISHING

A smooth finish may be achieved before the grout reaches its setting time by using a steel trowel or wooden trowel to level the surface.

CURING

- Cure time will depend on the ambient and substrate temperature. For the best results pour the grout and cure above 12°C.
- The grouts setting time will be delayed and will not achieve the desired properties at temperatures below 5°C.
- For cold weather grouting please contact Cormix Technical Department for assistance.

IMPORTANT NOTES TO ACHIEVE PRODUCT PERFORMANCE

- Do not alter the ratios of the set.
- Do not thin the grout with solvent or water to make it more flowable.
- Always use a header box to maintain pressure and the grouts flowability.
- Following proper installation procedures will reduce problems. The procedures contained in this data sheet highlight generally accepted field practices for successful grouting. These may be followed, modified or rejected by the user, however, it is not Cormix's responsibility for planning & understanding the installation appropriate to the conditions. If planned procedures differ from the data sheet, contact Cormix Technical Service Department.
- Epoxy based grouts sometimes develop cracks. Cracks are generally caused by thermal stresses, temperature difference, sharp corners and edges, etc. Horizontal edge cracks may occur just below the grout concrete interface especially in outdoor installations. Chamfering the concrete edge helps in reducing such cracks.
- To reduce/prevent curling use dowels or scabble back to expose rebar.

Following proper installation procedures will reduce the amount of crack development. The procedures contained in this data sheet highlight generally accepted field practices for successful grouting.

Condur ® EGLP2

A 2 COMPONENT HIGH STRENGTH, LOW EXOTHERM & LONG POTLIFE EPOXY GROUT

- These may be followed, modified or rejected by the user, however, it is not Cormix's responsibility for planning & understanding the installation appropriate to the conditions. If planned procedures differ from the data sheet contact Cormix Technical Service Department.
- If cracks develop use **Condur SC** (Low viscosity epoxy resin system) to repair the cracks. Consult Cormix.
- Make certain the most current version of the TDS & SDS are being used by contacting Cormix CS.
- Proper application is the responsibility of the user, field visits by Cormix personnel are for the purpose of making technical recommendations only & not for supervising or providing quality control at the job site.
- Read the Cormix epoxy grouting manual in conjunction with Technical Data Sheet.

CLEANING

Clean all tools and equipment immediately with Cormix Cleaner or xylene.

PACKAGING

A+B - 29 kg set (14.50 litre) & 20 kg set (10 litres).
Pre-measured sets or larger packaging upon request.

STORAGE & SHELF LIFE

Store in dry conditions between 5°C - 30°C. The shelf life is 12 months when unopened and stored correctly.

HEALTH & SAFETY

Avoid contact with skin and eyes and avoid breathing vapour. Use only in well ventilated areas away from heat sparks or naked flame. Wear suitable protective clothing, gloves and eye protection when mixing or using. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, do NOT induce vomiting give a glass of water. If in eyes, hold eyes open, flush with water for at least 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water.

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.

DISCLAIMER

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Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advice offered.

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

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Condur ® UEG

3 COMPONENT POURABLE MULTIPURPOSE UNDERWATER EPOXY GROUT

DESCRIPTION

A three component pourable epoxy grout based on a high grade epoxy resin and specially graded aggregates. On mixing a flowable grout is produced for use in heavy engineering and difficult conditions. It may be used as neat or in conjunction with fillers.

USES & ADVANTAGES

Condur UEG is a high strength epoxy grout with no shrinkage and is suitable for many grouting applications such as marine pile repair and restoration. Offers very good corrosion protection for concrete, steel, wood, etc.

Advantages include:-

- Chemical resistance.
- Solvent free & non flammable.
- Rapid shrinkage free hardening.
- High mechanical strength.
- Good impact and vibration resistant.
- High adjustable flow.
- Good bonding to most substrates.
- Long pot life for big pours and deep pours.
- Low exotherm.
- Pumpable & pourable grout.

PROPERTIES

Appearance:	Part A - Turbid thick liquid. Part B - Clear liquid. Part C - Filler.
Colour:	Black (when mixed)
Mixed density (kg/ltr):	2.10 ± 0.05
Consistency:	Pourable
Working time:	60 mins.
Compressive Strength (ASTM C579)	
1 day :	≥ 30 N/mm^2
3 days :	≥ 70 N/mm^2
7 days :	≥ 80 N/mm^2
Flexural Strength: ASTM C580	7 days ≥ 25 N/mm^2
Tensile Strength: ASTM D638	7 days ≥ 10 N/mm^2
Bond Strength: ASTM D4541	7 days ≥ 2 N/mm^2 (concrete failure)
Yield:	2100 kg/m^3
Application Temperature:	10 °C to 40 °C
Service Temperature:	5 °C to 60 °C
Creep (ASTM C1181)	0.6%
Linear Shrinkage : (ASTM D 2556)	Negligible
Thermal Expansion Coefficient: (ASTM C 531)	3.21 x 10^{-5} mm/mm/°C
Effective Bearing Area: (ASTM C 1339)	≥ 75%
Shrinkage Unrestrained : (ASTM C 531)	Negligible
E-Modulus: (ASTM C 580)	16000 N/mm^2
Water Absorption Coefficient @ 7days: (ASTM C413)	NIL
Grouting Thickness	Min : 10 mm. Max : 100 mm.
Chemical resistance: (ASTM D543)	Excellent most chemicals

Note:

- *The above data is typical under laboratory conditions at 25°C and does not constitute a specification. Field trials are recommended.*
- *The working time starts when the hardener is added to the resin material. Do not let the resin and hardener stand still without adding aggregates which may result in shorter working time. Working time will vary depending on the temperature and the quantity mixed. To get the optimum working time keep the material shaded and in a cool place.*

SUBSTRATE PREPARATION

All surfaces to be in contact with **Condur UEG** shall be free of marine growth, oil, grease, laitance, and other contaminants. Concrete must be clean, sound, and roughend to ensure a good bond.

MIXING

- For optimum performance, all components should be conditioned to between 65°F and 85°F (18°C and 29°C) prior to use.
- Pour all component B (hardener) into pail containing component A (resin).
- Mix thoroughly by hand with a paddle or with a slow speed drill and paddle mixer to avoid air entrapment.
- While mixing, slowly add component C and mix only until the mixture becomes homogenous.
- Do not mix more material that cannot be placed in 45 minutes.

METHODS OF PLACEMENT

Condur UEG may be pumped or poured into place. For vertical flow applications simply pour or pump from the top of the opening, or pump into ports. For horizontal applications, pour or pump from one side to the other. Tremie method are best suited to provide a suitable pressure head & rapid displacement of water.

POST PLACEMENT PROCEDURES

In-service operation may begin immediately after minimum required grout strength and modulus have been achieved.

CLEANING

Use a solvent or water and strong detergent solution on tools and equipment before material hardens.

PACKAGING

A+B+C 10 & 25 kg. Pre-measured sets or larger packaging upon request.

Condur ® UEG

3 COMPONENT POURABLE MULTIPURPOSE UNDERWATER EPOXY GROUT

STORAGE & SHELF LIFE

Store in dry conditions between 5ºC - 30ºC. The shelf life is 12 months when unopened and stored correctly.

HEALTH & SAFETY

Avoid contact with skin and eyes and avoid breathing vapour. Use only in well ventilated areas away from heat sparks or naked flame. Wear suitable protective clothing, gloves and eye protection when mixing or using. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **do NOT** induce vomiting give a glass of water. If in eyes, hold eyes open, flush with water for at least 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water.

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Condur ® UEG2

A TWO COMPONENT UNDERWATER EPOXY GROUT

DESCRIPTION

Condur UEG2 is a two part 100% solids moisture tolerant epoxy grout especially formulated for marine remediation projects such as concrete, timber and steel pile restoration.
It can be used above or below the water line.

USES & ADVANTAGES

Condur UEG2 is a high strength epoxy grout with no shrinkage developed for ease of installation specifically in marine pile, piers, jetties and walls rehabilitation applications.
It offers excellent corrosion protection to concrete, steel and timber.

Advantages include:-

- 2 part giving better quality control during mixing and reduced bubble entrainment.
- Excellent anti washout characteristics.
- Solvent free and non-flammable.
- Pumpable and pourable grout.
- Excellent resistance to chemicals and aggressive waters.
- Long working time up to 75 - 90 minutes at 25°C.
- High mechanical and ultimate strengths.
- No dust.
- No bag waste.

PROPERTIES

Components :	2 (Base & Hardener)	
Form :	Flowable	
Appearance :	Black (when mixed)	
Mixed Density (kg/ltr) :	Approx. 2.00	
Working Time :	75-90 mins.	
Compressive Strength :	> 55 N/mm^2	at 1 day
(ASTM C579)	> 90 N/mm^2	at 7 days
Flexural Strength :	> 25 N/mm^2	at 7 days
(ASTM C 580)		
Tensile Strength :	> 12 N/mm^2	at 7 days
(ASTM D 638)		
Bond Strength :	> 14 N/mm^2	at 7 days
(ASTM C882)		
Application Temperature:	10 ^{0}C to 40 ^{0}C	
	> 0 ^{0}C to < 10 ^{0}C	
	(Condition the material before use)	
Service Temperature:	- 40 °C to 100 °C	
Shrinkage Unrestrained:	Negligible	
(ASTM C 531)		
Water Absorption Coefficient @ 7days:		
(ASTM C 413)	Nil	
Grouting Thickness	Min : 10 mm.	
	Max : 300 mm.	
Chemical resistance :	Excellent to most chemicals	
(ASTM D543)		

Note:

- *The above data is typical @25°C under laboratory conditions and does not constitute a specification. Field trials are recommended.*
- *The working time starts when the hardener is added to the base material.*
  Working time will vary depending on the temperature and the quantity mixed. To get the optimum working time keep the material shaded and in a cool place.

SUBSTRATE PREPARATION

All surfaces to be in contact with **Condur UEG2** shall be free of marine growth, oil, grease, laitance, rust and other contaminants. Concrete must be clean, sound, and roughened to ensure a good bond.
High pressure water blast, sand blast or shot blast to remove any potential contaminants.

MIXING

Before mixing ensure components have been stored correctly.
Pour the contents of Part B into Part A and mix with a slow speed mixer for at least 3 minutes until a flowing uniform grout is achieved.
Avoid excessive mixing that may entrain air.

METHODS OF PLACEMENT

Condur UEG2 may be poured or pumped into place, the material is self-compacting.
If pumping check the equipment is suitable for pumping epoxy grouts.
Note : MAI 2PUMP-PICTOR mortar pump may be used.
Refer to method statement for more details.
The epoxy grout shall first be pumped through the lowest injection port moving upwards with the preceding port being sealed off the procedure is continued until the top of the form /jacket is reached.
The pumping and injection shall be continuous until the form is completely filled.
Tremie methods are best suited to provide a suitable pressure head and rapid displacement of water. The tremie hose should be slowly retracted as the grout is poured.

POST PLACEMENT PROCEDURES

In-service operation may begin immediately after the minimum required grout strength and modulus have been achieved.

CLEANING

Use a solvent or water and strong detergent solution on tools and equipment before material hardens.

PACKAGING

Part (A+B) = 29 kg set or 14.50 litres set.
Part A = 27.29 Kg & Part B = 1.71 Kg
Part (A+B) = 20 kg set or 10 litres set.
Part A = 18.82 Kg & Part B = 1.18 Kg
Pre-measured sets or larger packaging upon request.

STORAGE & SHELF LIFE

Store in dry conditions between 5°C - 30°C. The shelf life is 12 months when unopened and stored correctly.

Condur ® UEG2

A TWO COMPONENT UNDERWATER EPOXY GROUT

HEALTH & SAFETY

Avoid contact with skin and eyes and avoid breathing vapour. Use only in well-ventilated areas away from heat sparks or naked flame. Wear suitable protective clothing, gloves and eye protection when mixing or using. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **do NOT** induce vomiting give a glass of water. If in eyes, hold eyes open, flush with water for at least 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water.

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CORMIX®

(3.3)

Rail Embedment

Epoxy & Polyurethane Grout

Cormix International Limited ▶ The Construction Chemicals Specialist
89 Romklao Road, Minburi District, Sansab Subdistrict, Bangkok 10510 THAILAND
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Condur ® Rail Fix

POLYURETHANE ELASTOMERIC GROUT

DESCRIPTION

Condur Rail Fix is an elastomeric polyurethane rail grout providing vibration, dampening and electrical isolation whilst holding the rail securely in place absorbing movement without cracking. It is very rapid setting and may be used in new and repair applications. The product is in two parts to control the finished materials consistency, there is no need to add further aggregates.

USES & ADVANTAGES

Condur Rail Fix grout is used for filling the space between the rail and adjacent concrete. It is used with longitudinal rail and floating slab joints and embedded rails. Use for rail maintenance and new construction.

Advantages include:-

- Fast setting and curing.
- Setting time may be adjusted.
- Noise reduction.
- Electrical isolation.
- Bonds tenaciously to steel and concrete.
- Chemical, oil and fuel resistant.
- No VOCs.
- Self-priming
- Flexible.
- Flowable.
- Easy to mix.
- Two part providing better quality control.
- Long life expectancy
- Reduces vibration.
- Absorbs intensive dynamic and cyclic track loads.
- Does not contain rubber or cork.
- Insensitive to moisture

PROPERTIES

Specific Gravity @25ºC :	1.10 -1.16 kg/litre
Final Setting Time @25ºC :	Approx. 60 min.
Tensile Strength :	2.15 MPa.
ISO 527-2 : 2012	
Elongation at Break :	115 %
ISO 527-2 : 2012	
Shore A Hardness :	63
ISO 868 : 2003	
Pull-Off Test :	2.12 Mpa
ISO 4624 : 2023	
Determination of Resistive properties (DC methods)-	
Volume Resistivity :	5.32 x 10^{10} Ohm.m
EN 62631-3-1;2016	
Density for Component A & B :	1.13 gm/cc
ISO 2811-1 : 2023	
Volume Density of the Hardened Mass of Component A & B :	1.16 gm/cc
ISO 1183-1 : 2019	
Tear Strength :	0.32 KN/mm (320 N/mm)
ISO 34-1 : 2022	
Compression Modulus :	63.06 Mpa
ISO 604 : 2002	
Peel Strength :	1.85 Mpa
EN 1542 : 1999	
Reaction to Fire :	**Class E**
ISO 11925-2 : 2020	
Viscosity for Component A & B :	1686 mPa.S
ISO 3219 -1: 2021	
Infrared Spectrum for Component A & B :	
EN 1767 : 2000	FTIR Spectrum is found to be similar to Polyurethane
Trafficable at 25ºC :	Approx. 5 hours.
Full Cure Time at 25ºC :	7 Days
Application Temperature :	+5^{0}C to +35^{0}C.

For temperatures outside that please consult Cormix International limited.

Material temperature shall be preferably at +10^{0}C before application.

Service Temperature :	- 40 to 80ºC

Chemical Resistance :

ASTM D543

Dilute sulphuric acid & NaOH solution
Sea, Chlorine and Wastewater
Glycerine
Soap solution
Fuels & oils

Note : For more information details on chemical resistance contact Cormix International Limited.

Note: Protect from rain until **Condur Rail Fix** has reached its final setting time.
Surface temperature shall be +5ºC to +45^{0}C.
Wet & damp conditions: prime with **Condur EA2.**

PERFORMANCE PROPERTIES

It is very important to compare the data of the fully mixed material.
To ensure performance is maintained **Condur Rail Fix** is supplied in two parts in pre measured units.

CONSUMPTION

Approx. 92 sets (12 kgs) of **Condur Rail Fix** will yield 1 cubic metre of elastomeric grout.

SUBSTRATE PREPARATION

Ensure no moisture is present in the substrate. Hot air blasting can be used to remove excess moisture from the substrate. In the case of repairs cut out all damaged spalled concrete to leave a clean, dust free, dry, exposed aggregate surface, ensure there is no contamination. The edges of the repair must be cut at right angles the full depth of the repair. New concrete should be at least 14 days old, clean, free of contaminants such as oil, grease, curing compound or other materials that interfere with adhesion. The prepared concrete surface shall be clean and roughened.
Apply **Condur EA2** on the concrete channel surface for bonding Rail pad with the concrete.
Clean the rail surface thoroughly using rail scrubber machine and place the rail on the Rail pad.

MIXING & APPLICATION

STEP-1: MIXING PART A & B
Mix “Part A” & “Part B” for approx. 3 minutes using a high-speed drill mixer (or) paddle mixer having ribbon blades until a uniform homogenous mixture is achieved.
Pot life of product is 20-30 minutes @25^{0}C.

Condur ® Rail Fix

POLYURETHANE ELASTOMERIC GROUT

STEP-2: PLACING OF CONDUR RAIL FIX
Pour the homogenous mixture of **Condur Rail Fix**, immediately into the prepared area.
The poured material is self levelling.

STEP-3: CURING & FINISHING
The poured material will initially cure within 60 minutes, providing a smooth surface finish.
The applied product can accept traffic in approx. 5 hours.

CLEAN UP

Use xylene to clean equipment.

PACKAGING

12 kg set (10.9 litres)
20 Kg Set (18.18 litres)
Other pack sizes available.
Note : Various grades are available to meet specific project requirements

STORAGE & SHELF LIFE

Do not allow to freeze. Store in cool and dry place in unopened original containers at temperatures between +10°C and +25°C. Protect from direct sun light & frost. shelf life is 12 months when stored correctly in the original unopened containers.

HEALTH & SAFETY

Wear protective clothing, goggles & gloves. If in contact with eyes wash out immediately with water & seek medical attention.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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CONTACT DETAILS

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Condur ® Rail Fix 2

A SEMI RIGID POLYURETHANE ELASTOMERIC GROUT

DESCRIPTION

Condur Rail Fix 2 is a semi rigid elastomeric polyurethane rail grout providing vibration, dampening and electrical isolation whilst holding the rail securely in place absorbing movement without cracking. It is very rapid setting and may be used in new and repair applications. The product is in two parts to control the finished materials consistency, there is no need to add further aggregates.

USES & ADVANTAGES

Condur Rail Fix 2 grout is used for filling the space between the rail and adjacent concrete. It is used with longitudinal rail and floating slab joints and embedded rails. Use for rail maintenance and new construction.

Advantages include:-

- Fast setting and curing.
- Setting time may be adjusted.
- Noise reduction.
- Electrical isolation.
- Bonds tenaciously to steel and concrete.
- Chemical, oil and fuel resistant.
- No VOCs.
- Self-priming
- Flexible.
- Flowable.
- Easy to mix.
- Two part providing better quality control.
- Long life expectancy
- Reduces vibration.
- Absorbs intensive dynamic and cyclic track loads.
- Does not contain rubber or cork.
- Insensitive to moisture

PROPERTIES

Specific Gravity @25ºC :	1.10 -1.16 kg/litre
Final Setting Time @25ºC :	Approx. 60 min.
Tensile Strength : ISO 527-2 : 2012	4.61 MPa.
Elongation at Break : ISO 527-2 : 2012	95.69 %
Shore A Hardness : ISO 868 : 2003	82
Pull-Off Test : ISO 4624 : 2023	3.78 Mpa

Determination of Resistive properties (DC methods)-

Volume Resistivity : EN 62631-3-1;2016	1.76 x 10^{12} Ohm.m
Density for Component A & B : ISO 2811-1 : 2023	1.14 gm/cc
Volume Density of the Hardened Mass of Component A & B : ISO 1183-1 : 2019	1.16 gm/cc
Tear Strength : ISO 34-1 : 2022	0.35 KN/mm (350 N/mm)
Compression Modulus : ISO 604 : 2002	66.54 Mpa
Peel Strength : EN 1542 : 1999	2.84 Mpa
Reaction to Fire : ISO 11925-2 : 2020	Class E
Viscosity for Component A & B : ISO 3219 -1: 2021	1419 mPa.S
Infrared Spectrum for Component A & B : EN 1767 : 2000	FTIR Spectrum is found to be similar to Polyurethane
Trafficable at 25ºC :	Approx. 5 hours.
Full Cure Time at 25ºC :	7 Days
Application Temperature :	+5^{0}C to +35^{0}C.

For temperatures outside that please consult Cormix International limited.

Material temperature shall be preferably at +10^{0}C before application.

Service Temperature :	- 40 to 80ºC

Chemical Resistance :

ASTM D543

Dilute sulphuric acid & NaOH solution

Sea, Chlorine and Wastewater

Glycerine

Soap solution

Fuels & oils

Note : For more information details on chemical resistance contact Cormix International Limited.

Note: Protect from rain until **Condur Rail Fix 2** has reached its final setting time.

Surface temperature shall be +5ºC to +45^{0}C.

Wet & damp conditions: prime with **Condur EA2.**

PERFORMANCE PROPERTIES

It is very important to compare the data of the fully mixed material.

To ensure performance is maintained **Condur Rail Fix 2** is supplied in two parts in pre measured units.

CONSUMPTION

Approx. 122 sets (9 kgs) of **Condur Rail Fix 2** will yield 1 cubic metre of elastomeric grout.

SUBSTRATE PREPARATION

Ensure no moisture is present in the substrate. Hot air blasting can be used to remove excess moisture from the substrate. In the case of repairs cut out all damaged spalled concrete to leave a clean, dust free, dry, exposed aggregate surface, ensure there is no contamination. The edges of the repair must be cut at right angles the full depth of the repair. New concrete should be at least 14 days old, clean, free of contaminants such as oil, grease, curing compound or other materials that interfere with adhesion. The prepared concrete surface shall be clean and roughened.

Apply **Condur EA2** on the concrete channel surface for bonding Rail pad with the concrete.

Clean the rail surface thoroughly using a rail scrubber machine and place the rail on the Rail pad.

Condur ® Rail Fix 2

A SEMI RIGID POLYURETHANE ELASTOMERIC GROUT

MIXING & APPLICATION

STEP-1: MIXING PART A & B

Mix “Part A” & “Part B” for approx. 3 minutes using a high-speed drill mixer (or) paddle mixer having ribbon blades until a uniform homogenous mixture is achieved.

Pot life of product is 20-30 minutes @25^{0}C.

STEP-2: PLACING OF CONDUR RAIL FIX 2

Pour the homogenous mixture of **Condur Rail Fix 2**, immediately into the prepared area.

The poured material is self levelling.

STEP-3: CURING & FINISHING

The poured material will initially cure within 60 minutes, providing a smooth surface finish.

The applied product can accept traffic in approx. 5 hours.

CLEAN UP

Use xylene to clean equipment.

PACKAGING

9 kg set (8.1 litres)
Other pack sizes available.
Note : Various grades are available to meet specific project requirements

STORAGE & SHELF LIFE

Do not allow to freeze. Store in cool and dry place in unopened original containers at temperatures between +10°C and +25°C. Protect from direct sun light & frost. shelf life is 12 months when stored correctly in the original unopened containers.

HEALTH & SAFETY

Wear protective clothing, goggles & gloves. If in contact with eyes wash out immediately with water & seek medical attention.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Condur ® ARP

ELASTOMERIC CONCRETE

DESCRIPTION

Condur ARP is an elastomeric concrete for use in highways, taxiways and bridge repairs and for expansion joint assembly anchoring.

USES & ADVANTAGES

An easy to use flexible, durable and impact resistant elastomeric concrete. Primary uses include grouting of expansion joint assembly to fill blockouts each side of the expansion joint gap, it acts to lock the flanges of the expansion joint to the deck while adhering tenaciously to the concrete creating a watertight seal. It is used to repair damaged expansion joints or as a very fast curing repair mortar for potholes or spalls on highways, parking surfaces, bridge decks, taxiways and runways.

Advantages include: -

- Excellent adhesion to steel and concrete.
- Can be easily installed with early strength gain & flexibility.
- Can accept traffic in approx. one hour.
- Fully cured material is resistant to changes in temperature.
- Use as a pourable sealant in expansion joints.
- Withstands heavy loading.
- Resistant to chemicals & fuel oils.
- Can cut & grind within an hour.
- Impact absorbing.
- Sound dampening.
- No VOCs.
- Self levelling.

PROPERTIES

Specific Gravity @25ºC :	Approx. 1.8 kg/litre
Final Setting Time @25ºC :	Approx. 60 min.
Rheological Properties :	Self-Leveling.
(Immediately after mixing)	
Tensile Strength :	> 5 MPa.
ASTM D638	
Elongation at Break :	> 50 %
ASTM D638	
Shore D Hardness :	Approx.55-60
(Full Cure)	
ASTM D2240	
Impact Resistance :	No crack or breaks
ASTM D3029	observed.
Abrasion Test :	139 Mg/1000 cycles
Compressive Strength :	
7 Days @25ºC	7.5 - 12 N/mm^2
ASTM C579	
Trafficable at 25ºC :	Approx. 1 hour.
Full Cure Time at 25ºC :	7 Days
Adhesion Bond Strength :	3.2 N/mm^2
to Concrete @ 7 Days	
ASTM D4541	

Chemical Resistance :	Dilute sulphuric acid
ASTM D543	Dilute NaOH solution
	Sea water
	Chlorine water
	Waste water
	Glycerine
	Soap solution
	Fuels & oils

Note : For more information details on chemical resistance contact Cormix International Limited.

Note: Condur ARP is moisture sensitive. Part A & B must be premixed before adding Part C.
In case of unexpected rainfall conditions, ensure that the applied product has already reached its final setting time, before actual rainfall occurs.
Do not apply the product below 7ºC. Temperature should be 7ºC & rising.
Wet & damp conditions: prime with **Condur EA1**

PERFORMANCE PROPERTIES

It is very important to compare the data of the fully mixed material. Resin data is irrelevant as the material is always used with aggregate.
Adding aggregates increase strength at the expense of flexibility and brittleness. Heavy aggregate loadings reduces cost at the expense of performance. To ensure performance is maintained **Condur ARP** is supplied in three parts in pre measured units.
For faster setting or use in freezer rooms other grades are available, consult Cormix.
The maximum depth is 150 mm. and width 300 mm. for deeper or wider pours consult Cormix

CONSUMPTION

Approx. 79-81 sets of **Condur ARP** will yield 1 cubic metre of concrete.

SUBSTRATE PREPARATION

Ensure no moisture is present in the substrate. Hot air blasting can be used to remove excess moisture from the substrate. In the case of repairs cut out all damaged spalled concrete to leave a clean, dust free, dry, exposed aggregate surface, ensure there is no contamination. The edges of the repair must be cut at right angles the full depth of the repair. New concrete should be at least 14 days old, clean, free of contaminants such as oil, grease, curing compound or other materials that interfere with adhesion. No primer is required when the concrete surface is prepared clean and roughened.
In the case where additional bonding to the substrate is required, primer is available upon request.
For wet & damp conditions prime with **Condur EA1**.
Allow to dry for approx. 30 minutes to 2 hrs.

Condur ® ARP

ELASTOMERIC CONCRETE

MIXING & APPLICATION

STEP-1: MIXING PART A & B
Premix “Part A” & “Part B” for approx. 2-3 minutes using high speed drill mixer (or) paddle mixer having ribbon blades until a uniform homogenous mixture is achieved.

STEP-2: FILLER ADDITION TO PART A & B
Add preweighed aggregates of “Part C” slowly with continuous mixing to premixed resin-hardener mixture for approx. 2 minutes until a uniform homogenous mixture is obtained.
Note: Do not add all Part C at once.

STEP-3: PLACING OF CONDUR ARP
Pour the homogenous mixture of **Condur ARP**, immediately into the repair area.
The poured material is self levelling.

STEP-4: CURING & FINISHING
The poured material will initially cure within 5-10 minutes, providing smooth surface finish.
Notched trowel can be used after initial cure time, to trowel the applied product & get antiskid surface finish. The applied product reaches its final setting time in approx. 1 hour & then accept traffic.

Note : Long term exposure to sunlight causes the product to turn yellow.

CLEAN UP

Use xylene to clean equipment.

PACKAGING

23 kg set.
(Part A= 6 kg. Part B= 2 kg and Part C = 15 kg.)
23 kg set = 12.78 litres.

STORAGE & SHELF LIFE

Do not allow to freeze. Store in a dry shaded area between 10-35 ºC in original unopened containers. The shelf life is 12 months when stored correctly in the original unopened containers.

HEALTH & SAFETY

Wear protective clothing, goggles & gloves. If in contact with eyes wash out immediately with water & seek medical attention. Fatal if taken internally.

TECHNICAL SERVICE

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CORMIX
One step ahead

(4)

Concrete Repair & Protection

CORMIX
One step ahead

(4.1)

Cement Based

Conpatch® 300

THIN FAIRING COAT FOR CONCRETE SURFACE REPAIRS

DESCRIPTION

A polymer modified cementitious one part cosmetic repair mortar and thin fairing coat for concrete surface.
Complies to EN1504 part 9 and EN1504 Part 3.

- Principle 3 : Concrete Restoration (CR).
  Method 3.1 - Applying mortar by hand.
  Method 3.3 – Spraying concrete or mortar.

USES & ADVANTAGES

Conpatch 300 is used to repair minor surface defects on concrete mortar & stone. As a cosmetic repair material it is used to eliminate small defects due to bubbles, demoulding etc. Suitable for small repairs to precast concrete, columns, beams and fair faced concrete.

Advantages include:-

- Ready to use, one part.
- Good adhesion.
- Non toxic.
- Spray or brush apply.
- No corrosive effect to reinforcement.
- Good mechanical strength.
- Fast strength development.
- **Conpatch 300** may be over-coated.
- Non shrink.

PROPERTIES

Appearance:	Grey powder
Density:	Bulk density : ~1.38 kg./l.
	Fresh mortar : ~2.15 kg./l.
Pot life:	25-35 min @25 °C
Compressive Strength:	35-45 N/mm^2
ASTM C109	(28 days at 25°C, 50% rel. humidity)
Flexural Strength:	5-6 N/mm^2
ASTM C348	(28 days at 25°C, 50% rel. humidity)
Bond Strength to Concrete:	1.5-2.5 N/mm^2
ASTM D 4541	(28 days at 25°C, 50% rel. humidity)
Modulus of Elasticity:	19,600 N/mm^2

Coefficient of Thermal Expansion: 14 x 10^{-6} m/°C
CO2 Diffusion Resistance (æ H2O): 600
Water Vapour Diffusion Resistance (æ H2O): 93
Water Absorption ISAT : BS 1881 Part 5
10 mms < 0.009 ml/m^2/sec
2 hours < 0.006 ml/m^2/sec

SUBSTRATE PREPARATION

Ensure the substrate is clean, free from laitance, oil & grease. No loose particles should be present. The substrate must be saturated thoroughly for at least 2-4 hours before application of **Conpatch 300**.

MIXING

Mix **Conpatch 300** to water at no more than 5 : 1 (by weight) 3.6 : 1 (by volume). Add slowly the **Conpatch 300** to the water while mixing. Mix for approx. 3 minutes.

Mixing should be done by slow speed drill (500 r.p.m.) and using a proper mixing paddle. The entire contents of the bag should be mixed otherwise the product may not perform to specification.

METHOD OF USE

Apply **Conpatch 300** to the prepared area by trowel or putty knife. Work in a thin layer less than 2 mm. Finish off & smooth the repaired area with a soft sponge.

CONSUMPTION

Approx. 1.8 kg/m^2/mm.

PACKAGING

20 kg. 4 Ply plastic lined bags.

STORAGE & SHELF LIFE

Conpatch 300 should be stored in original, unopened packaging in a cool place away from moisture & naked flame. The shelf life is at least 9-12 months in unopened bags.

HEALTH & SAFETY

Conpatch 300 is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Conpatch 300** is non-flammable.

TECHNICAL SERVICE

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Conpatch ® 600

ONE PART POLYMER MODIFIED FINE CONCRETE STRUCTURAL REPAIR MORTAR

DESCRIPTION

A ready to use low shrinkage economical one component polymer modified structural repair mortar containing fibres and silica fume. **Conpatch 600** contains specially selected materials to provide a fine, smooth repair material.
Complies to EN1504 part 9 and EN1504 Part 3 class R4 and Part 4.

- Principle 3 : Concrete Restoration (CR).
  Method 3.1 - Applying mortar by hand.
  Method 3.3 - Spraying concrete or mortar.
- Principle 4 : structural strengthening (SS).
  Method 4.4 - Adding mortar or concrete.
- Principle 5 - Increase in physical resistance (PR).
  Method 5.3 - Adding mortar or concrete.
- Principle 7 : Preserving or restoring passivity (RP).
  Method 7.1 - Increasing cover to reinforcement with additional concrete or mortar.
  Method 7.2 - Replacing contaminated or carbonated concrete.

USES & ADVANTAGES

Conpatch 600 is a fine, ready to use repair mortar for repairing concrete surfaces including small honeycombs, surface defects, blowholes and minor damage. It can also be used to repair corrosive damage to concrete surfaces.
Conpatch 600 is suitable for structural repairs in buildings, marine structures, bridges and other infrastructure. It is suitable for structural strengthening and preserving/restoring passivity according to EN.
Advantages include:-

- Structural repair mortar.
- Easy to apply. Excellent workability.
- Non toxic. Non corrosive.
- Water & weatherproof.
- Reduces carbonation significantly.
- Excellent adhesion and mechanical strengths.
- Contains no chlorides or salts that may cause corrosion.
- Suitable for hand & machine application.
- Good colour matching to concrete.
- Non sagging.
- Good resistance to chlorides & sulphates.
- Contains fibres to reduce micro cracking and improve durability.

PROPERTIES AND COMPLIANCE

Appearance:	Grey powder
Compressive Strength:	1 Days≥30 N/mm^2
	7 Days≥ 45 N/mm^2
ASTM C109 at 25ºC	28 Days≥55 N/mm^2
Bond Strength to Concrete:	≥ 2 N/mm^2 (Concrete failure)
ASTM D4541	after 28 days at 25ºC
Pot life:	30-40 min @ 25ºC
Rapid Chloride Penetration :	< 1000 coulombs
ASTM C1202	

Note: *Properties depend on water content and are typical under laboratory conditions.*

SUBSTRATE PREPARATION

The substrate should be clean & sound. Remove dirt, dust, oil, grease, laitance, sealers, release agents, curing compounds & paints.

Exposed rebar should be cleaned & protected with **Congard Zinc** or **Conpatch NCI.**
The concrete should be presaturated for preferably 6 hours with water before application.
Substrate temperature : +5ºC min +35ºC max.
Ambient temperature : +5ºC min +35ºC max.

PRIMING

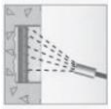
Priming is not normally required. Surfaces to receive **Conpatch 600** should be well saturated with water first.

MIXING

Conpatch 600 is simply mixed with water to yield a stiff easily workable compound with shrinkage compensating properties.
The quantity of water depends on the desired consistency but as a guide we recommend 15-16% by weight of **Conpatch 600**.
Mix with a paddle mixer or trowel for at least 3 minutes to ensure a homogenous lump free material is achieved.
Do not try to remix the product after losing workability by the addition of more water.

Typical System for Concrete Repair Using Conpatch Repair Mortars

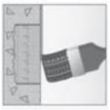
Remove damaged concrete and prepare exposed steel reinforcement.



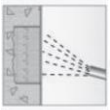
Thoroughly clean area of repair using high pressure water jet to remove all loose debris and contamination. Fingers should be able to be fitted behind rebar.

Mix and apply **Congard Zinc** or **Conpatch NCI** to rebar allow to dry. Apply **Cormix Latex** bonding bridge if required. Apply repair material WET ON WET to bonding bridge.

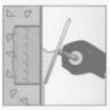
Replace damaged concrete using **Conpatch 600** one component polymer modified mortar, build up in layers if necessary.



Once set firm, the repair and surrounding area coat with **Corcure 90** or **Corcure 75** curing compound.



Remove any remaining **Corcure 90** from treated area if to overcoat.



Any further leveling may be achieved with fairing material.
A final coat of **Elastoclad** decorative elastomeric, anti-carbonation coating will prevent the ingress of water chlorides and other aggressive influences, effectively halting the carbonation process. **Elastoclad** is water vapour permeable, allowing the substrate to breathe, and has excellent elasticity, bridging dynamically moving cracks even at low temperatures.

Conpatch® 600

ONE PART POLYMER MODIFIED FINE CONCRETE STRUCTURAL REPAIR MORTAR

METHOD OF USE

Apply **Conpatch 600** with a trowel, spatula, float or by spray. By hand press hard. Work up to 20 mm. in one layer. Thicker repairs may be achieved by working in layers.

CURING

To prevent rapid surface drying and crazing, use a suitable curing compound from Cormix's **Corcure** range e.g. **Corcure 90.**

CONSUMPTION

Approx. 2 kg/m^2/mm.

PACKAGING

25 kg. 4 ply plastic lined bags.

STORAGE & SHELF LIFE

Conpatch 600 has a shelf-life of up to 12 months in unopened packs kept in a dry store. If high humidity is apparent the life may be reduced to 6-8 months.

HEALTH & SAFETY

Conpatch 600 is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Conpatch 600** is non-flammable.

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data. The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Conpatch ® 600HS

HIGH STRENGTH STRUCTURAL REPAIR MORTAR

DESCRIPTION

Conpatch 600HS is a ready to use one part spray or hand applied fibre reinforced, polymer modified high strength repair mortar.
Conpatch 600HS is suitable for structural repairs in buildings, marine structures, bridges and other infrastructure. It is suitable for structural strengthening and preserving/restoring passivity
Complies to EN1504 part 9 and EN1504 Part 3 class R4 and Part 4.

- Principle 3 : Concrete Restoration (CR).
  Method 3.1 - Applying mortar by hand.
  Method 3.3 – Spraying concrete or mortar.
- Principle 4 : structural strengthening (SS).
  Method 4.4 – Adding mortar or concrete.
- Principle 5 – Increase in physical resistance (PR).
  Method 5.3 – Adding mortar or concrete.
- Principle 7 : Preserving or restoring passivity (RP).
  Method 7.1 – Increasing cover to reinforcement with additional concrete or mortar.
  Method 7.2 – Replacing contaminated or carbonated concrete.

USES & ADVANTAGES

Conpatch 600HS is a fine, ready to use repair mortar for repairing concrete surfaces including honeycombs, surface defects and minor damage. It can also be used to repair corrosive damage to concrete surfaces.
Advantages include:-

- Structural repair mortar.
- Easy to apply. Excellent workability.
- Non shrink. Non toxic. Non corrosive.
- Water & weatherproof.
- Reduces carbonation significantly.
- Excellent adhesion and mechanical strengths.
- Contains no chlorides or salts that may cause corrosion.
- Gives better control and cost saving over two part systems.
- Good colour matching to concrete.
- Non sagging.
- Good resistance to chlorides & sulphates.
- Contains fibres to reduce micro cracking and improve durability.
- High and early mechanical strength.
- Can be applied up to 65 mm thick in single layer.
- Suitable for spray and trowel applied application.
- Also be used as dry pack mortar for various application by adjusting the water content of the mix.

PROPERTIES AND COMPLIANCE

Component:	Single
Appearance:	Grey powder
Compressive Strength:	47 N/mm^2 at 1 day
(ASTM C109)	75 N/mm^2 at 28 days
Fresh wet Density:	2.25±0.05 kg/ltr.
Pot life:	25-35 min @25 ºC
Rapid Chloride Permeability:	very low
(ASTM C1202)	(<800 Coulombs)

Note: The above data is typical under laboratory conditions with water to powder ratio of 0.14. These do not constitute a specification and field trials are recommended.

SUBSTRATE PREPARATION

The substrate should be clean & sound. Remove dirt, dust, oil, grease, laitance, sealers, release agents, curing compounds & paints.
Exposed rebar should be cleaned & protected with **Congard Zinc.**
The concrete should be presaturated for preferably 6 hours with water before application.
Substrate temperature : +5ºC min +35ºC max.
Ambient temperature : +5ºC min +35ºC max.

PRIMING

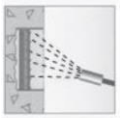
Priming is not normally required. Surfaces to receive **Conpatch 600HS** should be well saturated with water for at least 24 hrs before application. Where soaking with water is difficult, as an alternative method **Cormix Latex** can be used as a bonding bridge.

MIXING

Conpatch 600 HS is simply mixed with water to yield a stiff easily workable compound with shrinkage compensating properties.
The quantity of water depends on the desired consistency but as a guide we recommend 13-15% by weight of **Conpatch 600 HS.**
Mix with a paddle mixer or trowel for at least 3 minutes to ensure a homogenous lump free material is achieved. Do not try to remix the product after losing workability by the addition of more water.

Typical System for Concrete Repair Using Conpatch Repair Mortars

Remove damaged concrete and prepare exposed steel reinforcement.



Thoroughly clean area of repair using high pressure water jet to remove all loose debris and contamination. Fingers should be able to be fitted behind rebar.

Mix and apply **Congard Zinc** to rebar allow to dry. Apply **Cormix Latex** bonding bridge if required. Apply repair material WET ON WET to bonding bridge.

Replace damaged concrete using **Conpatch 600HS** one component polymer modified mortar, build up in layers if necessary.

Once set firm, the repair and surrounding area coat with **Corcure 90** or **Corcure 75** curing compound.

Remove any remaining **Corcure 90** from treated area if to overcoat.

Conpatch ® 600HS

HIGH STRENGTH STRUCTURAL REPAIR MORTAR

Any further leveling may be achieved with fairing material. A final coat of **Elastoclad** decorative elastomeric, anti-carbonation coating will prevent the ingress of water chlorides and other aggressive influences, effectively halting the carbonation process. **Elastoclad** is water vapour permeable, allowing the substrate to breathe, and has excellent elasticity, bridging dynamically moving cracks even at low temperatures.

METHOD OF USE

Apply **Conpatch 600HS** with a trowel, spatula, float or by spray. By hand press hard. Work up to recommended thickness in a single layer. Thicker repairs may be achieved by working in layers.

CURING

To prevent rapid surface drying and crazing, use a suitable curing compound from Cormix's **Corcure** range e.g. **Corcure 90.**

APPLICATION THICKNESS

	Horizontal	Vertical	Overhead
Min	5 mm	5 mm	5 mm
Max	65 mm	50 mm	30 mm

YIELD

12.4 ltr/25 kg.

COVERAGE

2.2-2.3 kg/m^2/mm.

LIMITATIONS

- During hot weather use chilled water for better workability.
- It is recommended to take adequate measures during placing at high temperatures.
- Properties may change for spray application for the cured material.
- Do not add water or rework with the mixed material which has begun to set.

PACKAGING

25 kg. 4 ply plastic lined bags.

STORAGE & SHELF LIFE

Conpatch 600HS has a shelf-life of up to 12 months in unopened packs kept in a dry store. If high humidity is apparent the life may be reduced to 6-9 months.

HEALTH & SAFETY

Conpatch 600HS is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Conpatch 600HS** is non-flammable.

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QUALITY ASSURANCE

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Conpatch ® 600MCI

ONE PART POLYMER MODIFIED STRUCTURAL REPAIR MORTAR INCORPORATING A CORROSION INHIBITOR

DESCRIPTION

A ready to use low shrinkage economical one component polymer modified structural repair mortar containing fibres and silica fume. **Conpatch 600MCI** contains specially selected materials to provide a fine, smooth repair material and a corrosion inhibitor to protect reinforcement.
Conpatch 600MCI is developed with an integral corrosion inhibitor that migrates through the concrete to form a passive layer on the reinforcement providing additional protection from chlorides and other salts.
Conpatch 600MCI is suitable for structural repairs in buildings, marine structures, bridges and other infrastructure. It is suitable for structural strengthening and preserving/restoring passivity according to EN 1504-9.
Complies to EN1504 part 9 and EN1504 Part 3 class R4 and Part 4.

- Principle 3 : Concrete Restoration (CR).
  Method 3.1 - Applying mortar by hand.
  Method 3.3 – Spraying concrete or mortar.
- Principle 4 : structural strengthening (SS).
  Method 4.4 – Adding mortar or concrete.
- Principle 5 – Increase in physical resistance (PR).
  Method 5.3 – Adding mortar or concrete.
- Principle 7 : Preserving or restoring passivity (RP).
  Method 7.1 – Increasing cover to reinforcement with additional concrete or mortar.
  Method 7.2 – Replacing contaminated or carbonated concrete.

USES & ADVANTAGES

Conpatch 600MCI is a fine, ready to use repair mortar for repairing concrete surfaces including small honey-combs, surface defects, blowholes and minor damage. It can also be used to repair corrosive damage to concrete surfaces.
Advantages include:-

- Structural repair mortar.
- Easy to apply. Excellent workability.
- Non shrink. Non toxic. Non corrosive.
- Water & weatherproof.
- Reduces carbonation significantly.
- Excellent adhesion and mechanical strengths.
- Contains no chlorides or salts that may cause corrosion.
- Suitable for hand and machine application.
- Good colour matching to concrete.
- Good resistance to chlorides & sulphates.
- Contains fibres to reduce micro cracking and improve durability.
- Provides effective protection to reinforcement by the incorporation of a corrosion inhibitor.
- Long term rebar protection.
- Provide 3 times rebar life extension.

PROPERTIES AND COMPLIANCE

Appearance:	Grey powder	
Compressive Strength:	1 Days	$\geq$ 25 N/mm^2
	7 Days	$\geq$ 40 N/mm^2
ASTM C109 at 25ºC	28 Days	$\geq$ 50 N/mm^2
Bond Strength to Concrete:	$\geq$ 2 N/mm^2 (Concrete failure)	
ASTM D4541	after 28 days at 25ºC	
Pot life:	30-40 min @ 25ºC	

Rapid Chloride Penetration : < 1000 coulombs
ASTM C1202
Note: *Properties depend on water content and are typical under laboratory conditions.*

SUBSTRATE PREPARATION

The substrate should be clean & sound. Remove dirt, dust, oil, grease, laitance, sealers, release agents, curing compounds & paints.
Exposed rebar should be cleaned & protected with **Congard Zinc** or **Congard ST.**
The concrete should be presaturated for preferably 6 hours with water before application.
Substrate temperature : +5ºC min +35ºC max.
Ambient temperature : +5ºC min +35ºC max.

PRIMING

Priming is not normally required. Surfaces to receive **Conpatch 600MCI** should be well saturated with water first.

MIXING

Conpatch 600MCI is simply mixed with water to yield a stiff easily workable compound with shrinkage compensating properties.
The quantity of water depends on the desired consistency but as a guide we recommend 16-18% by weight of **Conpatch 600MCI**.
Mix with a paddle mixer or trowel for at least 3 minutes to ensure a homogenous lump free material is achieved.
Do not try to remix the product after losing workability by the addition of more water.

Typical System for Concrete Repair Using Conpatch Repair Mortars

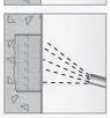
Remove damaged concrete and prepare exposed steel reinforcement.

Thoroughly clean area of repair using high pressure water jet to remove all loose debris and contamination. Fingers should be able to be fitted behind rebar.

Mix and apply **Congard Zinc** or **Congard ST** to rebar allow to dry. Apply **Cormix Latex** or **Condur EA2** bonding bridge if required. Apply repair material WET ON WET to bonding bridge.

Replace damaged concrete using **Conpatch 600MCI** one component polymer modified mortar, build up in layers if necessary.

Once set firm, the repair and surrounding area coat with **Corcure 90** or **Corcure 75** curing compound.



Remove any remaining **Corcure 90** from treated area if to overcoat.

Conpatch ® 600MCI

ONE PART POLYMER MODIFIED STRUCTURAL REPAIR MORTAR INCORPORATING A CORROSION INHIBITOR

Any further leveling may be achieved with fairing material. A final coat of **Elastoclad** decorative elastomeric, anti-carbonation coating will prevent the ingress of water chlorides and other aggressive influences, effectively halting the carbonation process. **Elastoclad** is water vapour permeable, allowing the substrate to breathe, and has excellent elasticity, bridging dynamically moving cracks even at low temperatures.

METHOD OF USE

Apply **Conpatch 600MCI** with a trowel, spatula, float or by spray. By hand press hard. Work up to 20 mm. in one layer. Thicker repairs may be achieved by working in layers.

CURING

To prevent rapid surface drying and crazing, use a suitable curing compound from Cormix's **Corcure** range e.g. **Corcure 90.**

CONSUMPTION

Approx. 2 kg/m^2/mm.

PACKAGING

25 kg. 4 ply plastic lined bags.

STORAGE & SHELF LIFE

Conpatch 600MCI has a shelf-life of up to 12 months in unopened packs kept in a dry store. If high humidity is apparent the life may be reduced to 6-8 months.

HEALTH & SAFETY

Conpatch 600MCI is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Conpatch 600MCI** is non-flammable.

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Conpatch ® 635

ONE PART POLYMER MODIFIED MEDIUM WEIGHT CONCRETE REPAIR MORTAR

DESCRIPTION

Ready to use one part concrete repair mortar which requires the addition of water to produce a medium weight repair mortar. **Conpatch 635** is based on cement, especially graded aggregate, light weight aggregates and additives which produce an easy to use mortar.
Complies to EN1504 Part 9 and EN1504 Part 3.

- Principle 3 : Concrete Restoration (CR).
  Method 3.1 - Applying mortar by hand.
  Method 3.3 – Spraying concrete or mortar.

USES & ADVANTAGES

Conpatch 635 is used to repair large areas of reinforced concrete where low permeability high quality repairs are required. It may be used in columns, and beams but due to its low density may also be used overhead and can also be used in small localised patch repairs. It can be applied in sections up to 40 mm. thick in vertical locations and 30 mm. overhead. Thick sections may be built in layers. Deeper pockets can be filled in single applications depending on the incline. Build can be increased significantly by wet spraying i.e. 75-100 mm. vertically and 65-85 mm. overhead depending on the reinforcement locations.
Use for remedial works to principle 3 method 3.1 & 3.3 EN 1504-9, principle 4 method 4.4 of EN 1504-9 and principle 7, method 7.1 & 7.2 of EN 1504-9
Where strength below 30 N/mm^2 or higher builds are required use **Conpatch 675.**

Advantages include:-

- Low chloride permeability.
- Excellent adhesion.
- High build are application.
- Can be spray applied.
- Suitable for contact with potable water. Conforms to AS/NZS 4020:2005.
- Very low shrinkage.

PROPERTIES AND COMPLIANCE

The following results were obtained at a water : powder ratio of 0.19 and temperature of 25ºC.

Appearance: Grey powder
Fresh Wet Density: Approx. 1,580 kg/m^3 depending on actual consistency used.
Setting Time: Initial 2.30 hours
ASTM C191-01a / ASTM C807 Final 4.00 hours
Compressive Strength: Approx. 28 - 35 N/mm^2
ASTM C109 at 28 days
Carbon Dioxide Barrier 10 mm. of Conpatch 635:
Equivalent to 600 mm of concrete
Chemical Resistance:
Reduces dramatically chemical attack due to low permeability. Impermeable to acid, gases, water borne chlorides, ions and oxygen. Chloride diffusion is very low.

Drying Shrinkage: < 300 micro strain at 7 days
ASTM C490 < 500 micro strain at 28 days
Fire Rating: Non combustible
Coefficient of Thermal Expansion: 11 x 10^{-6}/ ºC
Water Absorption: 10 minutes 0.007 ml/m^2/sec.
ISAT 2 hours 0.002 ml/m^2/sec.
Chloride Diffusion: < 5 x 10^{-13} m^2 s^{-1}.
Pot life: 25-35 min @25 ºC.

EN Requirements

Requirements as per EN 1504-3 Class R3
(Tested at Water : Powder ratio = 15.5%)

	Test Method	Result	Requirements (R3)
Compressive Strength	EN 12190	≥ 25 N/mm^2 (Mpa)	≥ 25 N/mm^2 (Mpa)
Chloride Ion Content	EN 1015-17	< 0.05 %	≤ 0.05 %
Capillary Absorption	EN 13057	≤ 0.5 kg.m^{-2}.h$^{-0.5}$	≤ 0.5 kg.m^{-2}.h$^{-0.5}$
Carbonation Resistance	EN 13295	Lower than control	dk ≤ control concrete
Adhesive Bond	EN 1542	≥ 1.5 N/mm^2 (Mpa)	≥ 1.5 N/mm^2 (Mpa)

SUBSTRATE PREPARATION

Cut back edges at right angles avoiding feather edges to a depth of at least 10 mm.
The substrate should be clean & sound. Remove dirt, dust, oil, grease, laitance, sealers, release agents, curing compounds & paints.
Exposed rebar should be cleaned & protected with **Congard Zinc** or **Congard ST**.
The concrete should be presaturated for preferably 6 hours with water before application.

PRIMING

Apply **Cormix Latex** / cement bonding slurry to prepared surface and whilst still tacky apply **Conpatch 635**.

MIXING

Note that powder must always be added to water.
Conpatch 635 is simply mixed with water to yield a stiff easily workable compound with shrinkage compensating properties.
The quantity of water depends on the desired consistency but as a guide we recommend 15-16% by weight of product.
Mix with a paddle mixer or trowel for at least 3 minutes to ensure a homogenous lump free material is achieved. Do not try to remix the product after losing workability by the addition of more water. Can be applied with a trowel or by spray.

Conpatch ® 635

ONE PART POLYMER MODIFIED MEDIUM WEIGHT CONCRETE REPAIR MORTAR

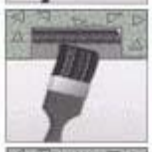
METHOD OF USE

Ensure exposed steel is firmly secured. Apply **Conpatch 635** by hand or trowel and firmly compact to primed surface. Build up in layers where greater depths than 30-40 mm. are required. Thicker repairs may be achieved by spraying.
If sagging occurs remove material and primer and start again in reduced thicknesses. The repair may be finished with a steel, wooden or plastic float, sponges may be used to achieve the required texture. Do not over work the surface.

Typical System for Concrete Repair Using Conpatch Repair Mortars

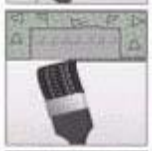
Remove damaged concrete and prepare exposed steel reinforcement.

Thoroughly clean area of repair using high pressure water jet to remove all loose debris and contamination.

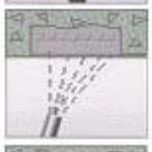


Mix and apply **Congard Zinc** to rebar allow to dry. Apply **Cormix Latex** bonding bridge if required. Apply repair material WET ON WET to bonding bridge.

Replace damaged concrete using **Conpatch 635** one component polymer modified medium weight mortar, build up in layers if necessary.

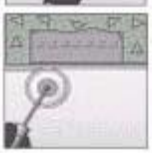


Once set firm, the repair and surrounding area coat with **Corcure 90** or **Corcure 75** curing compound.



Remove any remaining **Corcure 90** from treated area if to overcoat.

Any further leveling may be achieved with fairing material.
A final coat of **Elastoclad** decorative elastomeric, anti-carbonation coating will prevent the ingress of water chlorides and other aggressive influences, effectively halting the carbonation process. **Elastoclad** is water vapour permeable, allowing the substrate to breathe, and has excellent elasticity, bridging dynamically moving cracks even at low temperatures.



CURING

Cure with **Corcure 90.** Large areas should be cured as work progresses.

PACKAGING

18 kg. 4 ply plastic lined bags.

STORAGE & SHELF LIFE

Conpatch 635 has a shelf-life of up to 12 months in unopened packs kept in a dry store. If high humidity is apparent the life may be reduced to 6-8 months.

HEALTH & SAFETY

Conpatch 635 is non-toxic but is alkaline in its nature. Avoid inhalation of dust and contact with skin and eyes.
Wear suitable protective clothing, gloves and eye protection and dust mask. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. When in contact with skin rinse with clean water and cleanse with soap and water. **Conpatch 635** is nonflammable.

TECHNICAL SERVICE

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Conpatch ® 675

ONE PART LIGHT WEIGHT POLYMER MODIFIED REPAIR MORTAR FOR HIGH BUILD REPAIRS

DESCRIPTION

A ready to use one part light weight repair mortar. Provides excellent thermal compatibility to concrete, waterproof properties and long term durability.

Complies to EN1504 Part 9 and EN1504 Part 3.

- Principle 3 : Concrete Restoration (CR).
  Method 3.1 - Applying mortar by hand.
  Method 3.3 – Spraying concrete or mortar.

USES & ADVANTAGES

Specifically designed for vertical and overhead repairs of all sizes where high build is required. Provides excellent durability & resistance to chloride & carbon-dioxide.

Advantages include:-

- High build one application.
- Excellent bond.
- Contains shrinkage compensators.
- Low permeability.
- One part & prebagged.
- Can be wet sprayed.
- No formwork required.
- Overhead & vertical repairs made easy.
- Can be applied in sections up to 80 mm.
- Suitable for potable water contact.

PROPERTIES AND COMPLIANCE

The following results were obtained at a water : powder ratio of 0.19 and temperature of 25ºC.

Appearance: Grey powder

Fresh Wet Density: Approx. 1,400 kg/m^3 depending on actual consistency used.

Setting Time: Initial 2.00 hours
ASTM C191-01a / ASTM C807 Final 4.50 hours

Compressive Strength: Approx. 26 - 28 N/mm^2
ASTM C109 at 28 days

Carbon Dioxide Barrier 10 mm. of Conpatch 675:
Equivalent to 800 mm of concrete

Chemical Resistance:
Reduces dramatically chemical attack due to low permeability. Impermeable to acid, gases, water borne chlorides, ions and oxygen. Chloride diffusion is very low. Chloride diffusion < 2 x 10^{-10} cm^2/sec.

Drying Shrinkage: < 400 micro strain at 7 days
ASTM C490 < 580 micro strain at 28 days
BS 6319 Part 7

Fire Rating: Non combustible

Coefficient of Thermal Expansion: 7 to 12 x 10^{-6}/ºC

Water Absorption: 10 minutes 0.002 ml/m^2/sec.
ISAT 2 hours 0.001 ml/m^2/sec.

Chloride Diffusion: < 2 x 10^{-10} cm^2/sec.
Tested to BS 6319 Part 2, 6 & 7.

Pot life: 25-35 min @25ºC.

EN Requirements

Requirements as per EN 1504-3 Class R3

(Tested at Water : Powder ratio = 15.5%)

	Test Method	Result	Requirements (R3)
Compressive Strength	EN 12190	>25 N/mm^2 (Mpa)	≥ 25 N/mm^2 (Mpa)
Chloride Ion Content	EN 1015-17	< 0.009 %	≤ 0.05 %
Capillary Absorption	EN 13057	0.11 kg.m^{-2}.h$^{-0.5}$	≤ 0.5 kg.m^{-2}.h$^{-0.5}$
Carbonation Resistance	EN 13295	Lower than control	dk ≤ control concrete
Adhesive Bond	EN 1542	2.0 N/mm^2 (Mpa)	≥ 1.5 N/mm^2 (Mpa)

APPLICATION INSTRUCTIONS & SURFACE PREPARATION

Saw cut repair area to a depth at least 10 mm. to avoid feather edges. Break out repair area.

Clean surface remove unsound concrete, dust, oil, paint, grease, algae, etc. The surface must be left clean & roughened.

Steel should be cleaned to bright condition & primed using 2 coats **of Congard Zinc** or **Congard ST**.

Thoroughly soak the concrete with water prior to applying **Cormix Latex** bonding bridge. Work well into the surface. (Remove excess water before applying the bonding bridge).

Do not allow bonding bridge to dry out work wet on wet. If it dries out remove & reprime. **Cormix Latex** bonding bridge is not required in all circumstances consult Cormix Technical Dept.

BONDING BRIDGE

Apply **Cormix Latex** / cement bonding slurry or **Condur EA2** to the prepared surface and whilst still tacky apply **Conpatch 675.**

MIXING

Ensure thorough mixing in a forced action mixer or with a heavy duty drill (400/500 rpm.). Do not use free fall mixers or part bags.

Use 3.1 litre of clean water. Put the water into the mixer & add an 18 kg bag of **Conpatch 675**, mix for 3-5 minutes. Always add powder to water. The maximum water content should be 3.25 litre per 18 kg bag.

Conpatch ® 675

ONE PART LIGHT WEIGHT POLYMER MODIFIED REPAIR MORTAR FOR HIGH BUILD REPAIRS

APPLICATION

Apply **Conpatch 675** to the prepared area by hand or trowel. Work a thin layer into the primer then build until the required depth. On vertical & overhead surfaces build may be as high as 50-80 mm. without formwork. If high build is required work in layers. If sagging takes place reapply system including primer. The minimum build for **Conpatch 675** is 10 mm. Intermediate layers should be scratched keyed & cured with water.

Spray Application

Conpatch 675 applied by wet spray provides cost saving in terms of less wastage and higher productivity & gives a more dense material.

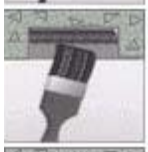
Finishing

Finish with a steel, wooden or plastic float.

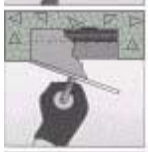
Typical System for Concrete Repair Using Conpatch Repair Mortars

Remove damaged concrete and prepare exposed steel reinforcement.

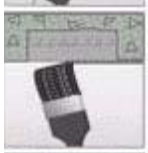
Thoroughly clean area of repair using high pressure water jet to remove all loose debris and contamination.



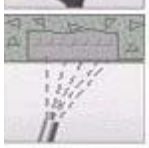
Mix and apply **Congard Zinc** to rebar allow to dry. Apply **Cormix Latex** bonding bridge if required. Apply repair material WET ON WET to bonding bridge.



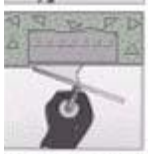
Replace damaged concrete using **Conpatch 675** one component polymer modified light weight mortar, build up in layers if necessary.



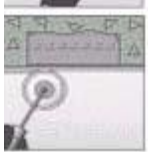
Once set firm, the repair and surrounding area coat with **Corcure 90** or **Corcure 75** curing compound.



Remove any remaining **Corcure 90** from treated area if to overcoat.



Any further leveling may be achieved with fairing material. A final coat of **Elastoclad** decorative elastomeric, anti-carbonation coating will prevent the ingress of water chlorides and other aggressive influences, effectively halting the carbonation process. **Elastoclad** is water vapour permeable, allowing the substrate to breathe, and has excellent elasticity, bridging dynamically moving cracks even at low temperatures.



CURING

Cure immediately after finishing with a curing compound e.g. **Corcure 90.** Large areas should be cured as work progresses. Do not use wax or P.V.A. based curing compounds if the surface is to be overcoated.

OVERCOATING

Conpatch 675 may be overcoated with most coating systems e.g. **Elastoclad** anti carbonation coatings.

LIMITATIONS

Conpatch 675 is not appropriate where high strengths are required or in trafficed areas (see properties). Do not mix part bags.

COVERAGE YIELD

Conpatch 675	14 - 15 litre : 18 kg bag. Approx. 1.5 m^2 at 10 mm thickness
Congard Zinc	11.8 m^2/litre at 50 micron d.f.t.
Cormix Latex	Approx. 5 m^2/litre

PACKAGING

18 kg. 4 ply plastic lined bags.

STORAGE & SHELF LIFE

Conpatch 675 has a shelf-life of up to 12 months in unopened packs kept in a dry store. If high humidity is apparent the life may be reduced to 6-8 months.

HEALTH & SAFETY

Conpatch 675 is non-toxic but is alkaline in its nature. Avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing, gloves and eye protection and dust mask. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. When in contact with skin rinse with clean water and cleanse with soap and water.

Conpatch 675 is non-flammable.

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

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Conpatch ® MC

SINGLE COMPONENT FREE FLOWING SHRINKAGE COMPENSATED LOW ALKALI MICRO CONCRETE

DESCRIPTION

Conpatch MC is a high strength, free flowing, shrinkage compensated concrete with low alkali content. The product is manufactured using especially selected cement, aggregates, fillers & polymers to provide a stable, free flowing micro concrete with controlled expansion both in wet & hardened states. It exhibits excellent thermal compatibility with concrete. Low water contents ensure a dense, durable & high strength material is achieved. Meets the requirements of EN 1504-3 class R4.

USES & ADVANTAGES

Conpatch MC's fluid properties ensures compaction and vibration are not required, its density provides excellent chloride and carbon dioxide resistance & reduces the incidience of alkali - silica reaction and sulphate attack.

Uses as a result of these properties include:-

- Pile cap repair.
- Repair of large sections including marine structures, bridges and beams etc.
- Difficuit access locations where hand application is not feasible.
- As a repair material where cathodic protection is used.
- In applications where poured under pressure.
- Filling voids/sections up to 250 mm (consult Cormix for deep sections).

Advantages include:-

- Excellent bond to concrete.
- Can pump or pour.
- Self-compacting, no vibration eleminates honey combing.
- High early & final strengths.
- Shrinkage compensated both wet & hardened state.
- Low permeability provides excellent protection against chloride & carbon dioxide.
- Low alkali content.
- Meets the requirements of EN 1504-3 class R4.

PROPERTIES

Appearance:	Grey Powder
Compressive Strength:	≥ 30 N/mm^2 at 1 day
	≥ 50 N/mm^2 at 3 days
ASTM C109	≥ 65 N/mm^2 at 28 days
Flow Properties:	J-rote 8-10 seconds
Drying Shrinkage:	<450 micro strain at 7 days
ASTM C490	<500 micro strain at 28 days
Water Absorption:	10 mins 0.018 ml/m^2/sec.
BS 1881 pt.5	2 hours 0.001 ml/m^2/sec.
Wet Density:	Approx. 2220 kg/m^3 depending on consistency used

Rapid Chloride Permeability: <650 coulombs
ASTM C1202

Yield : 77-78 x 25 kg bag/m^3 of grout

Water by weight of grout : 15-16%

CE Requirements EN 1504-3 class R4

	Results in laboratory	Requirements R4
Compressive strength:	> 65 N/mm^2	≥ 45 N/mm^2
Chloride ion Content:	< 0.004 %	≤ 0.05 %
Adhesive Bond:	2.0 N/mm^2	≥ 2 N/mm^2
Restrained Shrinkage:	2 N/mm^2	≥ 2 N/mm^2
Elastic Modulus:	20 GPa	≥ 20 GPa
Thermal Compatibility:	2 N/mm^2	≥ 2 N/mm^2

SURFACE PREPARATION

Surfaces to be repaired should be sound, clean with all contaminates such as oil, grease, dirt, paint, mould oil, curing compounds etc. removed.

Formwork should be rigid & sealed. Drain outlets should be installed to allow drainage of water after soaking under soffits air vents should also be incorporated. Edges should be sawn out to right angles with no feather edges. Corroded steel should be exposed fully including the back. Rebar should be grit blasted or water blasted to remove rust & chlorides if present.

Rebar Priming: After cleaning rebar it should be primed with **Congard Zinc** or **Congard ST** depending on the surface condition.

Substrate Priming: Several hours before placing **Conpatch MC** the whole surface should be saturated with water by filling the prepared formwork with clean water. All excess water must be removed before applying **Conpatch MC**.

MIXING

Mix using a forced action mixer or heavy duty slow speed drill (400-500 rpm) with spiral paddle. Never mix part bags. Add powder to water and mix for 3-4 minutes until a smoothe homogenous consistency is achieved.

The water content should be between 3.75-4.00 litre per 25 kg bag. Place all the mixed material within 30 minutes of mixing do not rework material by adding more water. If weather conditions are very hot use chilled water.

No vibration is required when placing. Cure **Conpatch MC** exposed surfaces immediately & stripped surfaces with Corcure. In rapid drying conditions exposed surfaces may be cured with polyethene sheet taped down at edges.

Where the surface is to receive a coating or render use **Corcure 75** or **Corcure 200** which are specifically manufactured to receive finishes.

Conpatch ® MC

SINGLE COMPONENT FREE FLOWING SHRINKAGE COMPENSATED LOW ALKALI MICRO CONCRETE

PACKAGING

25 kg. 4 Ply plastic lined bags.

STORAGE CONDITIONS & SHELF LIFE

Store in unopened bags in dry shaded conditions. The shelf life is 9-12 months when stored correctly if stored in high humidity the shelf life may reduce to 4-6 months. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Protective clothing such as gloves and goggles should be worn. Wash off material from skin with fresh water on contact. If in contact with eyes rinse with plenty of clean water & seek medical attention. If swallowed do not induce vomiting seek medical attention immediately.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Conpatch ® GC

HIGH STRENGTH, LOW SHRINKAGE, HIGH BUILD SPRAY APPLIED REPAIR MORTAR

DESCRIPTION

Conpatch GC is a cementitious one component polymer modified, Silica Fume based gunite repair mortar that cures to provide a durable water resistant high strength material. It is for mechanical application by dry shot guniting and has excellent adhesion.
Complies to EN1504 part 9 and EN1504 part 3.

- Principle 3 : Concrete Restoration (CR).
  Method 3.3 – Spraying concrete or mortar.
- Principle 7 : Preserving or restoring passivity (RP).
  Method 7.1 – Increasing cover to reinforcement with additional concrete or mortar.
  Method 7.2 – Replacing contaminated or carbonated concrete.

USES & ADVANTAGES

Conpatch GC is for mechanically applied concrete repair work by dry process guniting. The material is used for large repairs to reinforced concrete where there is corrosion to the reinforcement e.g. sea walls, bridge decks, piers, tunnels, viaducts, slab soffits, reservoirs sewers etc. The product is formulated to produce a high build, low rebound, fast strength gain repair which can be applied by standard spraying techniques.

Advantages include:-

- Chloride free.
- Low drying shrinkage.
- Low rebound & high build.
- High early strength.
- Excellent adhesion to old concrete.
- One component ready to use.
- Limited dust formation.
- Greatly reduced water & carbon dioxide permeability.
- Contains fibres to reduce micro cracking.
- Non toxic.

PROPERTIES

Form :	Powder
Colour :	Grey
Compressive Strength :	12-15 MPa @ 1 day
ASTM C109	> 50 @ 28 days
Adhesive strength :	≥ 2 MPa dependent on substrate condition
Drying shrinkage Modified 23°C/RH50% :	
ASTM C490	<350 micro strain @ 7 days <500 micro strain @ 28 days
Fresh wet density :	Approx. 2,100 kg/m^3 dependent on actual consistency used
Min. application Temperature :	5°C
Consumption :	Approx. 2.1 kg of Gunite/ltr or 2.1 kg of Gunite/sq.m./mm. thickness
Chloride Ion Diffusion :	Very low < 800 Coulombs
Thermal Expansion :	8 x 10-16 mm/°C

CE Requirements EN 1504-3 class R4

	Results in laboratory	Requirements R4
Compressive strength:	> 50 N/mm^2	≥ 45 N/mm^2
Chloride ion Content:	< 0.005 %	≤ 0.05 %
Adhesion:	2 N/mm^2	≥ 2 N/mm^2
Carbonation Resistance:	Lower than Control	dk ≤ control concrete
Capillary Absorption:	0.13 kg.m^{-2} h$^{-0.5}$	≤ 0.5 kg.m^{-2} h$^{-0.5}$

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Good surface preparation is essential to achieve adhesion. Saw cut to the extremities of the repair to a depth of at least 10 mm. to avoid feather edges providing a square edge. Cut out the complete area to a minimum depth of 10 mm. up to the sawn edge.
The surface must be clean & free of dust, unsound material, dirt, grease, paint, corrosion deposits, algae etc. Grit or grit/water blasting or scabbling is recommended.
Test surface preparation by pull off tests corroded steel in the repair area must be fully exposed, remove scale or corrosion deposits clean to a bright condition & ensure great attention is given to the back of the steel bars.

Important Notes :

Apply only to clean sound substrates.
Never apply to dry substrates.
Always ensure adequate curing of freshly placed gunite.

PRIMING OF REINFORCEMENT

Apply one coat of **Congard Zinc** or **Congard ST** & allow to dry before continuing. A second coat may be applied if doubt exists to the integrity of the first.

APPLICATION

Just before application prewet & wash clean the substrate with water remove any free standing water before application. Pressurised air used for cleaning should be oil free.
Ensure all reinforcement is secure to avoid poor build, compaction & bond.
Apply using suitable guniting equipment & ensure good compaction around exposed rebar. The material may be built up in 9 mm. to 50 mm. sections in one pass.
If sagging occurs remove material.
In dry shot processes the nozzle man will determine the water content & therefore the quality of the material sprayed. A low W/C will result in too much dust a high one in slumping

Conpatch ® GC

HIGH STRENGTH, LOW SHRINKAGE, HIGH BUILD SPRAY APPLIED REPAIR MORTAR

FINISHING

Strike off with a straight edge & close with a steel float. Wooden or plastic floats may be used to achieve the desired texture.

CURING

Suitable curing must be undertaken such as plastic sheet, wet Hessian, or a membrane such **as Corcure 90** or **Corcure 75.**

OVERCOATING WITH PROTECTIVE COATINGS

Remove any curing compounds before applying protective coatings. The repair material is highly durable, however, other areas will benefit from protection via the use of a protective coating. Use **Elastoclad** anti carbonation coating to produce a barrier limiting the advance of chlorides & carbondioxide.

CLEANING

Conpatch GC should be removed from tools, equipment and mixers with clean water immediately after use. Cured material can only be removed mechanically.

Equipment used with **Congard Zinc** or **Congard ST** should be cleaned with solvent.

LIMITATIONS

Conpatch GC should not be used when the temperature is below 5ºC and falling. Do not mix part bags. The product should not be exposed to moving water during application.

Exposure to heavy rainfall prior to the final set may result in surface scour.

PACKAGING

25 kg. 4 Ply plastic lined bags.

STORAGE & SHELF LIFE

Conpatch GC has a shelf-life of up to 12 months in unopened packs kept in a dry store. If high humidity is apparent the life may be reduced to 6-8 months.

HEALTH & SAFETY

Conpatch GC is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention.

Conpatch GC is non-flammable.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Conpatch ® Marine

HIGH EARLY STRENGTH REPAIR MORTAR FOR MARINE APPLICATIONS

DESCRIPTION

Conpatch Marine mortar is a structural repair mortar for use in marine and tidal areas subjected to early immersion.
Complies to EN1504 Part 9 and EN1504 Part 3.

- Principle 3 : Concrete Restoration (CR).
  Method 3.3 – Spraying concrete or mortar.
- Principle 7 : Preserving or restoring passivity (RP).
  Method 7.1 – Increasing cover to reinforcement with additional concrete or mortar.
  Method 7.2 – Replacing contaminated or carbonated concrete.

USES & ADVANTAGES

Use to achieve rapid repairs in areas subject to early water immersion. Ideal for repairing marine structures.

Advantages include:-

- Contains high alumina cement.
- Very rapid strength gain.
- Compatible to substrate.
- One part easy to mix & apply.
- Very dense with low shrinkage to reduce the incidence of chloride or moisture ingress.
- Excellent resistance to wash out.
- Non toxic, non hazardous to marine environment,
- Thixotropic allowing for 30 mm+ build on vertical surfaces.
- Provides concrete corrosion protection.

PROPERTIES

Appearance:	Grey Powder
Wet Density:	Approx 2,100 kg/m^3
Bond Strength to Concrete:	> 2.5N/mm^2
ASTM D4541	at 28 days (Concrete failure)
Drying Shrinkage:	< 500 micron
ASTM C490	at 28 days
Pot Life :	5-10 minutes when applied in mortar consistency.

Compressive Strength at 30ºC ASTM C109

Compressive Strength	Typical Results
2 hours	> 25 N/mm^2
4 hours	> 35 N/mm^2
8 hours	> 40 N/mm^2
24 hours	> 50 N/mm^2
28 days	> 70 N/mm^2
Water Content:	10 %

***Note**: These are typical figures results may vary depending on water content used, mixing time, and ambient temperature.*

SUBSTRATE PREPARATION

Surfaces should be saturated clean, sound and free from oil, grease, laitance and loose particles. Metal surfaces should also be clean & free from rust, oil & grease.

MIXING AND WATER CONTENT

Conpatch Marine should be mixed using a suitable mixer. Use a slow speed < 400 rpm hand drill and paddle. For large works use a high shear vane grout mixer. Drum mixers may not mix sufficiently.
Water contents will vary according to consistency required use 2.5-2.7 litres of clean water for patch repairing, 2.9-3.1 litres for pourable consistency and 3.3 to 3.5 ltr for fluid consistency.
Add slowly to the water (add the total bag). Mix continuously for 3 minutes ensuring a smooth even consistency is obtained.

APPLICATION

Ensure the substrate is correctly prepared, no contamination and saturated with potable water prior to placing. No free water should be left standing. Place within 5-10 minutes of mixing.

CURING

To prevent rapid surface drying and crazing, use a suitable curing compound from Cormix's Corcure range. e.g. **Corcure 90**. At temperatures below 20ºC early strength gain maybe affected.

IMPORTANT NOTES

- Minimum applied thickness of **Conpatch Marine** is 10 mm.
- At temperatures above 35ºC cooling of water with ice will make handling & placement easier. Mixers & tools should be kept shaded.
- Place as soon as mixed.

CONSUMPTION

For patch repairing of concrete: approx. 75 bags of 25 kg/m^3 by using 10% of water.
For fluid consistency: approx. 72-74 bags of 25 kg/m^3 by using 294 litres of water.
For pourable consistency: approx. 74-77 bags of 25 kg/m^3 by using 243.6 ltres of water.

CLEANING

Clean all tools with water immediately after use.

PACKAGING

25 kg. 4 Ply plastic lined bags.

Conpatch ® Marine

HIGH EARLY STRENGTH REPAIR MORTAR FOR MARINE APPLICATIONS

STORAGE CONDITIONS & SHELF LIFE

Store in dry shaded conditions. The shelf life is 6 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

During use avoid inhalation of dust & contact with skin & eyes. Wear protective clothing. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately

- **do NOT** induce vomiting.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.

Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.

The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.

Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

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Conpatch ® FMM

FLOWABLE MARINE REPAIR MORTAR FOR CONCRETE BASED ON CRYSTALLINE WATERPROOFING CHEMISTRY

DESCRIPTION

Conpatch FMM is a specially formulated flowable marine mortar, based on crystalline waterproofing chemistry containing fibres, silica fume, primary and secondary shrinkage compensators which is used to form a dense waterproof high strength corrosion resistant repair mortar for marine environments. **Conpatch FMM** is used for the structural repair and reprofiling of large vertical, horizontal, and overhead sections in marine structures.

USES & ADVANTAGES

Conpatch FMM is especially formulated for use in the repair of large voids and sections in an aggressive marine environment. It is used to protect concrete structures in coastal environments subjected to chloride and sulphate exposure in splash and tidal zones. It is a flowable mortar based on the latest construction chemicals chemistry.

Advantages include: -

- Protects and waterproofs with crystalline waterproofing chemistry.
- Surrounding concrete improved.
- Especially formulated for large area pouring or pumping repairs
- Dense mortar matrix to provide protection against the ingress of water, chlorides and sulphates.
- Fibre reinforced to reduce micro cracks and increase tensile and impact strength.
- Similar properties to the host concrete
- Excellent adhesion to substrate
- High strength
- Low shrinkage and high bond strength to achieve a monolith repair.
- Non-toxic.
- One part, easy to mix and place.
- Silica fume modified repair mortar.
- Contains primary and secondary shrinkage compensators.
- Complies with BSEN 1504-3 Class R4

PROPERTIES

Appearance: Grey powder
Bulk Density: Approx. 1.66-1.70 kg/litre
Yield: Approx. 78 x 25 kg/bags/m^3 of mortar @ 15% water content

Expansion of up to 1% or greater in unset material according to ASTM C940.

Drying shrinkage is compensated for complying with the requirements of ASTM C1107, type C.

Rapid Chloride Penetration: < 1000 Coulombs
ASTM C1202 at 28 days

Sulphate Resistance : Significantly Improved.
ASTM C1012 < 0.05% (182 days)

Compressive Strength : ≥ 60 N/mm^2 at 28 days

Crack sealing : 0.5 mm at 28 days

Permeability : < 5 mm
BSEN 12390 Part 8 / DIN 1048 Part 5

Coefficient of Water Permeability: 0.41 X 10^{-13} m/Sec
ASTM C642

Bond Strength to Concrete ≥ 2 N/mm^2 after 28 days
ASTM D4541 (concrete failure)

SURFACE PREPARATION

Surfaces should be clean, sound and free from oil, grease, laitance and loose particles. Metal surfaces should also be clean & free from rust, oil & grease.

MIXING

Conpatch FMM is a pre-mixed non-shrink pourable mortar. Pour 3.75 litres of water into a mixing container and add 1 bag of **Conpatch FMM** gradually whilst mixing (max. 400 R.P.M.), mix for 3-5 minutes until lump free.

Do not add more than the maximum water content. This will result in loss of strength and possible segregation.

APPLICATION

Ensure the substrate is correctly prepared. No contamination and saturated with water at least 3 - 4 hours prior to pouring the mortar. No free water should be left standing. During application ensure air entrained into the mortar is able to escape through relief holes. Maintain continuous head, mortar flow should not be interrupted.

CURING

To prevent rapid surface drying and crazing, use a suitable curing compound such as **Corcure 90.**

IMPORTANT

- Air relief holes should be used.
- Min. gap 10 mm up to max. 150 mm.
- Cure the mortar.
- Formwork should be secure, do not allow mortar loss.
- Temperatures will affect the setting time and strength gain.

In temperatures over 35°C ice or chilled water may be used.

Note :- For large & deep volume pours saturated 10 mm down aggregate can be mixed with mortar in the ratio of 1:1 or 1:2 as per site required conditions.

CONSUMPTION

78 x 25 kg bags & 292 litres of water for approx. 1 m^3 of mortar.

CLEANING

Clean all tools with water immediately after use.

PACKAGING

25 kg bag. 4 ply plastic lined bags.

Conpatch ® FMM

FLOWABLE MARINE REPAIR MORTAR FOR CONCRETE BASED ON CRYSTALLINE WATERPROOFING CHEMISTRY

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 9 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Conpatch FMM is alkaline avoid contact with skin & eyes. Gloves, goggles and dust mask should be worn. Remove from skin with soapy water. Splashes in the eyes should be washed out with copious amounts of clean water and medical attention sought.
Conpatch FMM is non-flammable.

TECHNICAL SERVICE

The Cormix International Limited 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

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ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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CONTACT DETAILS

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CORMIX
One step ahead

(4.2)

Epoxy Based

Condur ® EA1

STRUCTURAL EPOXY ADHESIVE, FIXING AND REPAIR PASTE/FILLER

DESCRIPTION

Condur EA1 is a two component, epoxy paste or pourable, structural adhesive/filler. It cures with minimal shrinkage at temperatures above 5ºC to a very strong, dense solid material. The mixed material is applied to a suitably prepared surface and quickly cures to form a complete impermeable repair/ adhesive unaffected by many forms of chemical attack. It is supplied as a two pack colour coded material in pre-weighed quantities ready for on-site mixing and use. Conforms to ASTM C881-78 Type I Grade 3 Class B+C.

Condur EA1 is available in both pourable & paste grade.

USES & ADVANTAGES

For speedy and permanent patching repairs to concrete structures, bonding of precast concrete components, bridge bearings to concrete, and all repair work to concrete cementitious substrates where strength, impermeability to water and resistance to aggressive chemicals is essential, emergency repairs to concrete structures, sea walls and industrial floors in chemical handling and process areas.
The thixotropic nature of **Condur EA1** makes the product ideal for setting starter bars, dowels, holding down bolts and anchoring in general.

Advantages include:-

- Early development of initial hardness, minimizes maintenance disruption.
- Pre-weighed quality controlled materials ensure consistency and reduce risk of site errors.
- Two pack colour coding gives visual check on correct mixing.
- High early strength without shrinkage.
- Unaffected by a wide range of acids, alkalis and industrial chemicals.
- 3 to 4 times stronger than typical concrete.
- Excellent resistance to abrasion and impact.
- Natural grey colour sympathetic to aesthetic requirements.
- Two grades pourable & paste.
- Non sag. (paste), Easy to apply.
- Suitable for dry and damp (wet) surface.

PROPERTIES

Appearance: Grey, when mixed (may yellow and/or darken when exposed to sunlight or certain chemicals)

Pot Life: 1.5 kg mixed at 30ºC, 30 min.

Note: *To obtain maximum pot life, spread **Condur EA1** into a thin (less than 10 mm.) layer immediately after mixing.*

Initial Hardness: 4 hours.

Full Cure: 7 days, below 20ºC the curing time will be increased

Setting Time (5mm): Approx.30-40 min. (30ºC)

Condur EA1	Paste	Pourable
Specific Gravity: (Mixed Approx.; kg/litre)	1.70	1.50
Compressive Strength (28 days) :		
ASTM C881/881M	75-80 N/mm^2	65-70 N/mm^2
Flexural Strength (28 days) :		
ASTM C348	30-40 N/mm^2	25-35 N/mm^2
Slant Shear Bond Strength to Concrete (28 days):		
	≥9 N/mm^2 (Concrete Failure)	(both grades)
Bond Strength to Steel (28 days) :		
ASTM D4541	10-15 MPa	(both grades)

Chemical Resistance:

Citric Acid 10%	Excellent
Tartaric Acid 10%	Excellent
Sodium Hydroxide 50%	Excellent
Diesel Fuel/Petrol	Excellent
Sugar Solutions	Very Good
Lactic Acid 10%	Very Good
Hydrocarbons	Very Good
Phosphoric Acid 50%	Very Good

Data quoted is typical for this product and does not constitute a specification.

Mixing Ratio: A : B = 2 : 1 by weight

Note: To obtain performance characteristics stated in this data sheet, the mixing ratio must be maintained.

SETTING TIMES

Condur EA1 setting time can be adjusted to meet specific requirements accelerating or retarding, for example, for precast segment gluing.

SUBSTRATE PREPARATION

All grease, oil, chemical contamination, dust, laitance and loose concrete must be removed by scabbling or light bush hammering to provide a sound substrate. Concrete must be at least 14 days old prior to treatment. Steel surfaces should be grit blasted to white metal. Surfaces which show any traces of oil must be degreased with a chemical degreaser prior to grit blasting.

MIXING

Care should be taken to ensure that **Condur EA1** is mixed thoroughly. The hardener and the resin components should first be stirred separately to disperse any settlement. The entire contents of the hardener tin should then be poured into the resin tin and the two components mixed thoroughly using a low-speed drill and paddle for at least 2 minutes until a uniform colour is obtained.

Condur ® EA1

STRUCTURAL EPOXY ADHESIVE, FIXING AND REPAIR PASTE/FILLER

APPLICATION

Apply the mixed **Condur EA1** with a notched trowel, putty knife, caulking gun, etc. depending upon the application.
Bonded surfaces should be held rigidly together until the **Condur EA1** has set.

ESTIMATING

Quantity Estimating Guide
Table indicates volume of **Condur EA1** in ml/100 mm. bond.

Hole Diameter (mm.)	Volume of Grout for Bolt Diameter					
	12	**16**	**20**	**25**	**32**	**40**
20	25					
25	50	40	25			
32	80	70	60	40		
38		130	100	75	45	
45			150	130	100	45
50				180	150	90
62					280	225

CLEANING

All tools and equipment should be cleaned immediately after use with Cormix Cleaner. Hardened material can only be removed mechanically.

PACKAGING

1.5 And 6.0 kg. Two component packs.

STORAGE & SHELF LIFE

Condur EA1 has a shelf life of 12 months when stored in a dry place below 35ºC in unopened containers.

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **do NOT** induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Condur ® EA1/SB

STRUCTURAL SEGMENTAL BRIDGE ADHESIVE

DESCRIPTION

Condur EA1/SB is a two component, thixotropic epoxy structural adhesive. **Condur EA1/SB** is specifically manufactured for use as a segmental bridge adhesive. It cures with minimal shrinkage at temperatures above 5ºC to a very strong, dense solid material. The mixed material is applied to a suitably prepared surface and quickly cures to form a complete impermeable adhesive unaffected by many forms of chemical attack. It is supplied as a two pack colour coded material in pre-weighed quantities ready for on-site mixing and use. It conforms to ASTM, FIP & BS standards.
Condur EA1/SB meets the requirements for segmental adhesives and conforms to ASTM C881-78 VI Grade III Class D, E & F.

USES & ADVANTAGES

Condur EA1/SB is used for segmental bridge construction and bonding precast concrete components.
Advantages include:-

- Early development of initial hardness, minimizes maintenance disruption.
- Pre-weighed quality controlled materials ensure consistency and reduce risk of site errors.
- Two pack colour coding gives visual check on correct mixing.
- High early strength without shrinkage.
- Unaffected by a wide range of acids, alkalis and industrial chemicals.
- 3 to 4 times stronger than typical concrete.
- Excellent resistance to abrasion and impact.
- Natural grey colour sympathetic to aesthetic requirements.
- Two grades pourable & paste.
- Non sag. (paste), Easy to apply.
- Suitable for dry and damp (wet) surface moisture tolerant.
- Solvent free.
- Lubricates surface.
- Tailor made formulas.
- High strength and modulus of elasticity.

PROPERTIES

Appearance: Grey, when mixed (may yellow and/or darken when exposed to sunlight or certain chemicals)
Initial Hardness: 4 hours.
Full Cure: 7 days, below 20ºC the curing time will be increased.
Setting Time (3mm): Approx.>60 min. (+35ºC)

Condur EA1/SB	Paste	Pourable
Specific Gravity: (Mixed Approx.; kg/ltr)	1.75-1.85	1.65-1.75
Compressive Strength: ASTM C579 (N/mm²)	70-80	70-80
Flexural Strength: ASTM C580 (N/mm²)	30-40	30-40
Tensile Bending Strength: FIP 5.14 (N/mm²)	Concrete failure	Concrete Failure
Bond Strength to Concrete: (Concrete Failure) ASTM C882	≥2 Mpa (both grades)	
Bond Strength to Steel:	20 Mpa (both grades)	
Chemical Resistance:		
Citric Acid 10%	Excellent	
Tartaric Acid 10%	Excellent	
Sodium Hydroxide 50%	Excellent	
Diesel Fuel/Petrol	Excellent	
Sugar Solutions	Very Good	
Lactic Acid 10%	Very Good	
Hydrocarbons	Very Good	
Phosphoric Acid 50%	Very Good	

Data quoted is typical for this product and does not constitute a specification.

Note: To obtain performance characteristics stated in this data sheet, the mixing ratio must be maintained.

Below are typical results achieved with this product.

Average compressive strength results:		
ASTM, N/mm² at 7 days	25ºC	70-75
	35ºC	75-80

For strengths at alternative temperatures & ages of material contact Cormix International Ltd.

	25ºC	+35ºC	+55ºC
Open Time: (min) (FIP 5.2)	>70	>60	>20
Slant Shear Strength: (N/mm²)	-	15-17 (or) concrete failure	18-22 (or) concrete failure
Pot Life: (min) (FIP 5.1)	≥45	≥30	≥20

Note:-
Open Time *is effected by volume mixed and may be adjusted to meet specific requirements.*
Slant Shear Strength*- failure within concrete meets requirements of FIP 5.14.*
Thixotropy Sag Flow: *No sag at 2-3 mm thickness 5ºC to 35ºC according to FIP 5.3.*
Condur EA1/SB *may be adjusted to conform with ASTM C881-78 various Types and Grades as required or to customer's specification.*
To obtain maximum pot life, spread ***Condur EA1/SB*** *into a thin (less than 3 mm.) layer immediately after mixing.*

Condur ® EA1/SB

STRUCTURAL SEGMENTAL BRIDGE ADHESIVE

SETTING TIME/POT LIFE

Condur EA1/SB setting time/pot life can be adjusted to meet specific requirements. The greater the quantity mixed the shorter the potlife.
High temperatures reduce potlife.
Squeezability: According to the standard FIP/9/92 and the thickness of the joint is anticipated as follows:

Squeezability	Joint Thickness :	Min-Max (mm)
0.25 N/mm^2		0.25-0.35
7.50 N/mm^2		0.25-0.40

The results are achieved using an adhesive layer between 2 standard 100 mm concrete cubes after curing, saw cutting & measuring the adhesive thickness. Meets the requirements of all loads FIP 5.4.

Modulus of Elasticity:

Instant Modulus to Compression	9,500-12,000 N/mm^2
Deferred Modulus in Compression	9,000-11,500 N/mm^2
Requirements Instant	>8,000 N/mm^2
Deferred	>6,000 N/mm^2

Water absorption: <0.5% passes requirement
Shrinkage: (%) <0.18 passes requirement of <0.4% after 7 days FIP 5.7
Heat Resistance: HDT >50ºC meets requirements of FIP 5.10

SUBSTRATE PREPARATION

All grease, oil, chemical contamination, dust, laitance and loose concrete must be removed by scabbling or light bush hammering to provide a sound substrate. Concrete must be at least 14 days old prior to treatment.
Steel surfaces should be grit blasted to white metal. Surfaces which show any traces of oil must be degreased with a chemical degreaser prior to grit blasting.

MIXING

Care should be taken to ensure that **Condur EA1/SB** is mixed thoroughly. The hardener and the resin components should first be stirred separately to disperse any settlement. The entire contents of the hardener tin should then be poured into the resin tin and the two components mixed thoroughly using a low-speed drill and paddle for at least 2 minutes until a uniform colour is obtained.

APPLICATION

Apply the mixed **Condur EA1/SB** with a notched rowel, putty knife, caulking gun or by hand, etc. depending upon the application. Bonded surfaces should be held rigidly together until the **Condur EA1/SB** has set.

CLEANING

All tools and equipment should be cleaned immediately after use with Cormix Cleaner. Hardened material can only be removed mechanically.

CONSUMPTION

Condur EA1/SB Paste: 1.80 kg/m^2 for 1 mm thickness.
Condur EA1/SB Pourable: 1.70 kg/m^2 for 1 mm thickness.

PACKAGING

1.5 kg set and 6.0 kg set. Two component packs.

STORAGE & SHELF LIFE

Condur EA1/SB has a shelf life of 12 months when stored in a dry place below 35ºC in unopened containers.

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **do not** induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

TECHNICAL SERVICE

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Condur ® 41

A 2 COMPONENT EPOXY RESIN PATCHING MORTAR

DESCRIPTION

A solvent free 2 part epoxy resin thixotropic patching mortar consisting of a resin and hardener containing especially selected fillers. On mixing a multifunctional epoxy adhesive & repair mortar is produced.

USES & ADVANTAGES

Condur 41 is an easy to apply epoxy mortar with medium size fillers allowing for various uses, these include: - repair of precast elements, finishing of I beam ends, repairing damaged concrete edges, providing an abrasion resistant lining, vertical & overhead repairs, also use as an adhesive.

Advantages include:-

- Easy to apply to precast elements & edges of concrete.
- Good build.
- Excellent adhesion.
- Abrasion & impact resistance.
- Excellent strengths.
- Suitable for both dry & damp surfaces.
- Uneffected by high humidity.
- Coloured components to ensure good mixing.
- Good chemical resistance.

PROPERTIES

Colour: Part A - Off yellowish white thixotropic paste.
Part B - Off yellowish black thixotropic paste.

Density: Approx. 1.9-2.1 kg/litre

Mixing ratio: Part A : B = 2 : 1 by weight
Part A : B = 2 : 1 by volume

Pot Life:

Temperature °C	6 kg set
40	30-40 min.
30	60 min.
20	90 min.

Note: *To obtain maximum pot life, spread* ***Condur 41*** *into a thin (less than 10 mm.) layer immediately after mixing.*

Compressive strength: 60-64 N/mm^2 @1 day
ASTM C579 70-75 N/mm^2 @7 days
78-82 N/mm^2 @28 days

Flexural strength: 25-35 N/mm^2 @ 28 days

Bond Strength: >13 N/mm^2 at 28 days
ASTM C882

Setting Time: Approx. 3 hrs @25°C
@15mm thickness

Data quoted is typical for this product and does not constitute a specification.

Note: *To obtain performance characteristics stated in this data sheet, the mixing ratio must be maintained.*

SURFACE PREPARATION

All grease, oil, chemical contamination, dust, laitance and loose concrete must be removed by scabbling or light bush hammering to provide a sound substrate. Concrete must be at least 14 days old prior to treatment. Steel surfaces should be grit blasted to white metal. Surfaces which show any traces of oil must be degreased with a chemical degreaser prior to grit blasting.

PRIMING

Surfaces to receive **Condur 41** should be well primed with **Condur EA2** first.

MIXING

Care should be taken to ensure that **Condur 41** is mixed thoroughly. The hardener and the resin components should first be stirred separately to disperse any settlement. The entire contents of the hardener tin should then be poured into the resin tin and the two components mixed thoroughly using a low-speed drill and paddle for at least 2 minutes until a uniform colour is obtained.

APPLICATION

Apply the mixed **Condur 41** with a notched trowel, putty knife, caulking gun, etc. depending upon the application. Bonded surfaces should be held rigidly together until the **Condur 41** has set.

COVERAGE RATES

Approx. 2 kgs/m^2/mm thickness.

CLEANING

Clean all tools immediately after use with thinner.

PACKAGING

6 kg set (A+B).

STORAGE & SHELF LIFE

Condur 41 has a shelf life of 12 months when stored in a dry place below 35°C in unopened containers.

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products.

If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, do NOT induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

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Condur ® EM

3 COMPONENT EPOXY MORTAR

DESCRIPTION

A solvent free 3 component repair mortar which when mixed produces a trowelable mortar with good adhesion to cement bound surfaces.

USES & ADVANTAGES

Condur EM is a high strength material with no shrinkage, and suitable as a bedding or underfilling mortar (dry pack) or for the repair of horizontal surfaces such as industrial floors, joint arises in roads, bridge decks, concrete runways and precast units. An economical material which is solvent free.

Advantages include:-

- Chemical resistance.
- Shrinkage free hardening.
- Rapid hardening.
- High mechanical strength.
- Curing is not affected by high humidity.
- Abrasion & Impact resistant.
- Vibration resistant.

PROPERTIES

Appearance:	Grey (A : Transparent, B : Transparent, C : Grey)
Density:	Approx. 1.6-1.7 kg./ltr.
Compressive Strength:	Approx. 60 - 70 N/mm^2
Pot Life:	30 - 45 minute at 23°C
Bond Strength:	2 - 3 N/mm^2 (concrete failure)
Flexural Strength:	15 - 25 N/mm^2
Chemical resistance:	
Citric Acid 10%	Excellent
Tartaric Acid 10%	Excellent
Acetic Acid 5%	Satisfactory
Nitric Acid 25%	Good
Hydrochloric Acid 25%	Excellent
Sulphuric Acid 50%	Very Good
Sodium Hydroxide 50%	Excellent
Diesel Fuel / Petrol	Very Good
Sugar Solutions	Very Good
Lactic Acid	Very Good
Hydrocarbons	Very Good
Phosphoric Acid 50%	Very Good

Note: To obtain performance characteristics stated in this data sheet, the mixing ratio must be maintained.

SUBSTRATE PREPARATION

Surface preparation is important. All surfaces should be dry, clean, free from standing water, grease, curing compounds, mould oils and all loosely adhering particles.

Cement laitance should be removed by mechanical means. Roughen surfaces with chipping to ensure good bonding. Steel surfaces should be grit blasted to white metal.

PRIMING

For maximum adhesion of heavily filled mortars etc. the surfaces to be treated should be primed by mixing A & B in the packed ratio. Apply with a stiff brush, work in well.

MIXING

Mix component A and B thoroughly with a slow speed drill for 1 - 2 minutes. (Max 400 R.P.M.) Then add component C for the desired consistency and mix until a homogeneous mortar is achieved.

APPLICATION

Whilst the primer is still tacky spread the material and trowel firmly into place. For large volumes apply in layers ensuring the previous layers have hardened and cooled. Contact Cormix International Ltd. for advise on difficult applications.

CLEANING

Clean all tools and equipment immediately with Cormix Cleaner.

IMPORTANT NOTES / SPECIFICATION CLAUSES

The minimum and maximum substrate application temperature should be 5°C and 40°C respectively. For additional information contact Cormix International Technical Service Department.

PACKAGING

10 kg set (A+B+C). premeasured sets or larger packaging upon request.

STORAGE & SHELF LIFE

Store in dry conditions between 5-40°C. The shelf life is 12 months when stored correctly in unopened original containers.

HEALTH & SAFETY

Avoid contact with skin and eyes and avoid breathing vapour. Use only in well ventilated areas away from heat sparks or naked flame. Wear suitable protective clothing, gloves and eye protection when mixing or using. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, do NOT induce vomiting give a glass of water. If in eyes, hold eyes open, flush with water for at least 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water.

Condur ® EM

3 COMPONENT EPOXY MORTAR

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 : 2015 verified by TUV Nord.
ISO14001:2015 verified by Lloyd's Register International.

CONTACT DETAILS

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Condur ® EF

LIGHT WEIGHT 3 COMPONENT FINE EPOXY REPAIR MORTAR

DESCRIPTION

A solvent free, 3 component, thixotropic repair mortar which when mixed produces a trowelable mortar with good adhesion to cement bound surfaces. Easy to use multi-purpose repair material and adhesive.

USES & ADVANTAGES

Condur EF can be filled to the desired consistency by the addition or reduction of Part C. This provides more flexibility in the products application. It can be used for vertical or overhead filling of voids, as a repair mortar and protective linings to concrete.

Advantages include:-

- Rapid hardening.
- Unaffected by high humidity.
- Use on both damp or dry surfaces.
- Excellent adhesion to concrete.
- Shrinkage free hardening.
- Chemical resistance.
- Abrasion & impact resistance.

PROPERTIES

Appearance: Grey (A: Transparent, B: Transparent, C: Grey)
Density: Approx. 1.49 kg/litre
Mixing Ratio: Mix A + B and add C for the desired consistency

Pot life:	Temp °C	10 kg.
	40	20 mins.
	30	30 mins.
	20	60 mins.

Compressive strength: 40 - 60 N/mm^2
Flexural strength: 20 - 30 N/mm^2
Bond strength to concrete: $\geq$ 2 N/mm^2 (Concrete failure)

Note : *Characteristics of mixed product will depend on mixing ratio used. Part A + B must be mixed thoroughly for a minimum of 2 minutes prior to addition of Part C.*

SUBSTRATE PREPARATION

Surface preparation is important. All surfaces should be dry, clean, free from standing water, grease and all loose particles. Cement laitance should be removed by mechanical means.

PRIMING

For adhesion of heavily filled mortars etc. the surfaces to be treated should be primed by mixing A & B in the packed ratio. Apply with a stiff brush, work in well. Priming is not required on small repairs except on damp surfaces.

MIXING

Mix component A and B thoroughly with a slow speed drill for a minimum of 2 minutes (Max 400 R.P.M.). Then add Component C for the desired consistency and mix until a homogeneous mortar is achieved.

APPLICATION

Whilst the primer is still tacky spread the material and trowel firmly into place.

IMPORTANT NOTES / SPECIFICATION CLAUSES

Condur EF may be applied in layers up to a maximum thickness of 5 cm. per layer (2 cm. for large areas). The minimum age of concrete should be 3-6 weeks depending on the climate.

Minimum substrate temperature = 5°C

Maximum substrate temperature = 40°C

When priming **Condur EF** from premeasured packs take a maximum of 10% for primer.

CONSUMPTION

Approx. 1.49 kg. per m^2 at 1 mm. thick.

CLEANING

Clean all tools and equipment immediately with Cormix Cleaner.

PACKAGING

A : B : C 10 kg. premeasured sets or larger packaging upon request.

STORAGE & SHELFLIFE

Store in dry conditions between 5°C - 40°C. The shelf life is 12 months when unopened and stored correctly.

HEALTH & SAFETY

Avoid contact with skin and eyes and avoid breathing vapour. Use only in well ventilated areas away from heat, sparks or naked flame. Wear suitable protective clothing, gloves and eye protection when mixing or using. If poisoning occurs, contact a Doctor or Poisons Information Centre. If swallowed, do NOT induce vomiting give a glass of water. If in eyes, hold eyes open, flush with water for at least 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water.

Condur ® EF

LIGHT WEIGHT 3 COMPONENT FINE EPOXY REPAIR MORTAR

TECHNICAL SERVICE

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QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.

The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.

Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered

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Condur® FC

TWO COMPONENT HIGH BUILD EPOXY BUG HOLE FILLER

DESCRIPTION

Condur FC is supplied as a two component, solvent free epoxy system. It consists of base, which is white in colour and hardener which is black colour.

Condur FC is applied directly to concrete substrates and essentially used for filling pinholes and surface irregularities in concrete prior to the application of subsequent coatings. Complies to ASTM C881, Type I and IV Grade 3, class B&C.

USES & ADVANTAGES

Condur FC is designed for application to minor imperfections from feather edge to 3 mm. It can be used in the following situations:

- Concrete & masonry surface imperfections.
- Filling pinholes prior to overcoating.
- Sealing of surface cracks, which is required during crack injection works.
- General reprofiling over large areas, up to 3 mm depth.

Advantages include:-

- Moisture insensitive.
- Good chemical resistance.
- Easy to use.
- High early strength.
- Excellent bonding to the substrate.
- No curing is required.
- Cost effective as no primer is required.

PROPERTIES

Component:	Two Part A : Base / B : Hardener
Colour of mix:	Grey
Solids by weight:	100%
Potlife @ 25ºC:	60 mins.
Recoat time:	After 24 hrs.
Compressive Strength: (ASTM D695)	> 65 N/mm^2 @7 days
Specific gravity of mix:	1.74 $\pm$ 0.2
Mixing ratio of A: B:	2: 1 by weight.
Tensile Strength: (ASTM D638)	5-10 N/mm^2 @7 days
Bond Strength: (Concrete failure) (ASTM D4541)	$\geq$ 2 N/mm^2 @7 days

Slant Shear Bond Strength: 20 N/mm^2 @ 14 days (ASTM C882)

SETTING TIMES

Working life and setting time will vary depending on ambient and substrate temperatures.

SUBSTRATE PREPARATION

All grease, oil, chemical contamination, dust, laitance and loose concrete must be removed by scabbling or light bush hammering to provide a sound substrate.

Concrete must be at least 14 days old prior to treatment.
Steel surfaces should be grit blasted to white metal.
Surfaces which show any traces of oil must be degreased with a chemical degreaser prior to grit blasting.

MIXING

In order to produce a fully homogeneous paste, proper care should be taken to ensure that **Condur FC** is thoroughly mixed.
Both the hardener and base components should be stirred thoroughly during mixing in order to disperse the material.
The entire contents of the hardener should be emptied into the base container and the components mixed together using a mixing paddle attached to a slow-speed (400 rpm) heavy duty drill, mix until a consistent uniform grey color paste is obtained.
Under no circumstances should part packs be used or part mixing be attempted.

APPLICATION

A variety of tools such as trowel, scraper, filling knife can be used. Apply the mixed **Condur FC** to the prepared substrate. After mixing, material can be taken directly from the can or subdivided onto spot boards for individual application.
If a very smooth finish is required, a small amount of solvent may be flicked on to the surface of the **Condur FC** with a paint brush prior to final trowelling.
Condur FC can be overcoated with all epoxy coatings after a minimum curing period of 24 hours prior to overcoating, the surface of the fully cured **Condur FC** should first be abraded to assist adhesion and then cleaned to a dust-free finish.
Do not proceed with the application when rainfall is imminent unless in a sheltered or protected situation.

CLEANING

All tools and equipment should be cleaned immediately after use with Cormix Cleaner. Hardened material can only be removed mechanically.

PACKAGING

3 kg pack per set.

COVERAGE

Approx. 1.75 kg/m^2/mm with no allowance for wastage.

STORAGE & SHELF LIFE

Condur FC has a shelf life of 12 months when stored in a dry place below 35ºC in unopened containers.

Condur® FC

TWO COMPONENT HIGH BUILD EPOXY BUG HOLE FILLER

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, do NOT induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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CORMIX
One step ahead

(4.3)

Bonding Bridge

Condur ® EA1

STRUCTURAL EPOXY ADHESIVE, FIXING AND REPAIR PASTE/FILLER

DESCRIPTION

Condur EA1 is a two component, epoxy paste or pourable, structural adhesive/filler. It cures with minimal shrinkage at temperatures above 5ºC to a very strong, dense solid material. The mixed material is applied to a suitably prepared surface and quickly cures to form a complete impermeable repair/ adhesive unaffected by many forms of chemical attack. It is supplied as a two pack colour coded material in pre-weighed quantities ready for on-site mixing and use. Conforms to ASTM C881-78 Type I Grade 3 Class B+C.

Condur EA1 is available in both pourable & paste grade.

USES & ADVANTAGES

For speedy and permanent patching repairs to concrete structures, bonding of precast concrete components, bridge bearings to concrete, and all repair work to concrete cementitious substrates where strength, impermeability to water and resistance to aggressive chemicals is essential, emergency repairs to concrete structures, sea walls and industrial floors in chemical handling and process areas.
The thixotropic nature of **Condur EA1** makes the product ideal for setting starter bars, dowels, holding down bolts and anchoring in general.

Advantages include:-

- Early development of initial hardness, minimizes maintenance disruption.
- Pre-weighed quality controlled materials ensure consistency and reduce risk of site errors.
- Two pack colour coding gives visual check on correct mixing.
- High early strength without shrinkage.
- Unaffected by a wide range of acids, alkalis and industrial chemicals.
- 3 to 4 times stronger than typical concrete.
- Excellent resistance to abrasion and impact.
- Natural grey colour sympathetic to aesthetic requirements.
- Two grades pourable & paste.
- Non sag. (paste), Easy to apply.
- Suitable for dry and damp (wet) surface.

PROPERTIES

Appearance: Grey, when mixed (may yellow and/or darken when exposed to sunlight or certain chemicals)

Pot Life: 1.5 kg mixed at 30ºC, 30 min.

Note: *To obtain maximum pot life, spread **Condur EA1** into a thin (less than 10 mm.) layer immediately after mixing.*

Initial Hardness: 4 hours.

Full Cure: 7 days, below 20ºC the curing time will be increased

Setting Time (5mm): Approx.30-40 min. (30ºC)

Condur EA1	Paste	Pourable
Specific Gravity: (Mixed Approx.; kg/litre)	1.70	1.50
Compressive Strength (28 days) :		
ASTM C881/881M	75-80 N/mm^2	65-70 N/mm^2
Flexural Strength (28 days) :		
ASTM C348	30-40 N/mm^2	25-35 N/mm^2
Slant Shear Bond Strength to Concrete (28 days):		
	≥9 N/mm^2 (Concrete Failure)	(both grades)
Bond Strength to Steel (28 days) :		
ASTM D4541	10-15 MPa	(both grades)

Chemical Resistance:

Citric Acid 10%	Excellent
Tartaric Acid 10%	Excellent
Sodium Hydroxide 50%	Excellent
Diesel Fuel/Petrol	Excellent
Sugar Solutions	Very Good
Lactic Acid 10%	Very Good
Hydrocarbons	Very Good
Phosphoric Acid 50%	Very Good

Data quoted is typical for this product and does not constitute a specification.

Mixing Ratio: A : B = 2 : 1 by weight

Note: To obtain performance characteristics stated in this data sheet, the mixing ratio must be maintained.

SETTING TIMES

Condur EA1 setting time can be adjusted to meet specific requirements accelerating or retarding, for example, for precast segment gluing.

SUBSTRATE PREPARATION

All grease, oil, chemical contamination, dust, laitance and loose concrete must be removed by scabbling or light bush hammering to provide a sound substrate. Concrete must be at least 14 days old prior to treatment. Steel surfaces should be grit blasted to white metal. Surfaces which show any traces of oil must be degreased with a chemical degreaser prior to grit blasting.

MIXING

Care should be taken to ensure that **Condur EA1** is mixed thoroughly. The hardener and the resin components should first be stirred separately to disperse any settlement. The entire contents of the hardener tin should then be poured into the resin tin and the two components mixed thoroughly using a low-speed drill and paddle for at least 2 minutes until a uniform colour is obtained.

Condur ® EA1

STRUCTURAL EPOXY ADHESIVE, FIXING AND REPAIR PASTE/FILLER

APPLICATION

Apply the mixed **Condur EA1** with a notched trowel, putty knife, caulking gun, etc. depending upon the application.
Bonded surfaces should be held rigidly together until the **Condur EA1** has set.

ESTIMATING

Quantity Estimating Guide
Table indicates volume of **Condur EA1** in ml/100 mm. bond.

Hole Diameter (mm.)	Volume of Grout for Bolt Diameter					
	12	**16**	**20**	**25**	**32**	**40**
20	25					
25	50	40	25			
32	80	70	60	40		
38		130	100	75	45	
45			150	130	100	45
50				180	150	90
62					280	225

CLEANING

All tools and equipment should be cleaned immediately after use with Cormix Cleaner. Hardened material can only be removed mechanically.

PACKAGING

1.5 And 6.0 kg. Two component packs.

STORAGE & SHELF LIFE

Condur EA1 has a shelf life of 12 months when stored in a dry place below 35ºC in unopened containers.

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **do NOT** induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Condur ® EA1/SB

STRUCTURAL SEGMENTAL BRIDGE ADHESIVE

DESCRIPTION

Condur EA1/SB is a two component, thixotropic epoxy structural adhesive. **Condur EA1/SB** is specifically manufactured for use as a segmental bridge adhesive. It cures with minimal shrinkage at temperatures above 5ºC to a very strong, dense solid material. The mixed material is applied to a suitably prepared surface and quickly cures to form a complete impermeable adhesive unaffected by many forms of chemical attack. It is supplied as a two pack colour coded material in pre-weighed quantities ready for on-site mixing and use. It conforms to ASTM, FIP & BS standards.
Condur EA1/SB meets the requirements for segmental adhesives and conforms to ASTM C881-78 VI Grade III Class D, E & F.

USES & ADVANTAGES

Condur EA1/SB is used for segmental bridge construction and bonding precast concrete components.
Advantages include:-

- Early development of initial hardness, minimizes maintenance disruption.
- Pre-weighed quality controlled materials ensure consistency and reduce risk of site errors.
- Two pack colour coding gives visual check on correct mixing.
- High early strength without shrinkage.
- Unaffected by a wide range of acids, alkalis and industrial chemicals.
- 3 to 4 times stronger than typical concrete.
- Excellent resistance to abrasion and impact.
- Natural grey colour sympathetic to aesthetic requirements.
- Two grades pourable & paste.
- Non sag. (paste), Easy to apply.
- Suitable for dry and damp (wet) surface moisture tolerant.
- Solvent free.
- Lubricates surface.
- Tailor made formulas.
- High strength and modulus of elasticity.

PROPERTIES

Appearance: Grey, when mixed (may yellow and/or darken when exposed to sunlight or certain chemicals)
Initial Hardness: 4 hours.
Full Cure: 7 days, below 20ºC the curing time will be increased.
Setting Time (3mm): Approx.>60 min. (+35ºC)

Condur EA1/SB	Paste	Pourable
Specific Gravity: (Mixed Approx.; kg/ltr)	1.75-1.85	1.65-1.75
Compressive Strength: ASTM C579 (N/mm²)	70-80	70-80
Flexural Strength: ASTM C580 (N/mm²)	30-40	30-40
Tensile Bending Strength: FIP 5.14 (N/mm²)	Concrete failure	Concrete Failure
Bond Strength to Concrete: (Concrete Failure) ASTM C882	≥2 Mpa (both grades)	
Bond Strength to Steel:	20 Mpa (both grades)	
Chemical Resistance:		
Citric Acid 10%	Excellent	
Tartaric Acid 10%	Excellent	
Sodium Hydroxide 50%	Excellent	
Diesel Fuel/Petrol	Excellent	
Sugar Solutions	Very Good	
Lactic Acid 10%	Very Good	
Hydrocarbons	Very Good	
Phosphoric Acid 50%	Very Good	

Data quoted is typical for this product and does not constitute a specification.

Note: To obtain performance characteristics stated in this data sheet, the mixing ratio must be maintained.

Below are typical results achieved with this product.

Average compressive strength results:		
ASTM, N/mm² at 7 days	25ºC	70-75
	35ºC	75-80

For strengths at alternative temperatures & ages of material contact Cormix International Ltd.

	25ºC	+35ºC	+55ºC
Open Time: (min) (FIP 5.2)	>70	>60	>20
Slant Shear Strength: (N/mm²)	-	15-17 (or) concrete failure	18-22 (or) concrete failure
Pot Life: (min) (FIP 5.1)	≥45	≥30	≥20

Note:-
Open Time *is effected by volume mixed and may be adjusted to meet specific requirements.*
Slant Shear Strength*- failure within concrete meets requirements of FIP 5.14.*
Thixotropy Sag Flow: *No sag at 2-3 mm thickness 5ºC to 35ºC according to FIP 5.3.*
Condur EA1/SB *may be adjusted to conform with ASTM C881-78 various Types and Grades as required or to customer's specification.*
To obtain maximum pot life, spread ***Condur EA1/SB*** *into a thin (less than 3 mm.) layer immediately after mixing.*

Condur ® EA1/SB

STRUCTURAL SEGMENTAL BRIDGE ADHESIVE

SETTING TIME/POT LIFE

Condur EA1/SB setting time/pot life can be adjusted to meet specific requirements. The greater the quantity mixed the shorter the potlife.
High temperatures reduce potlife.
Squeezability: According to the standard FIP/9/92 and the thickness of the joint is anticipated as follows:

Squeezability	Joint Thickness :	Min-Max (mm)
0.25 N/mm^2		0.25-0.35
7.50 N/mm^2		0.25-0.40

The results are achieved using an adhesive layer between 2 standard 100 mm concrete cubes after curing, saw cutting & measuring the adhesive thickness. Meets the requirements of all loads FIP 5.4.

Modulus of Elasticity:

Instant Modulus to Compression	9,500-12,000 N/mm^2
Deferred Modulus in Compression	9,000-11,500 N/mm^2
Requirements Instant	>8,000 N/mm^2
Deferred	>6,000 N/mm^2

Water absorption: <0.5% passes requirement
Shrinkage: (%) <0.18 passes requirement of <0.4% after 7 days FIP 5.7
Heat Resistance: HDT >50ºC meets requirements of FIP 5.10

SUBSTRATE PREPARATION

All grease, oil, chemical contamination, dust, laitance and loose concrete must be removed by scabbling or light bush hammering to provide a sound substrate. Concrete must be at least 14 days old prior to treatment.
Steel surfaces should be grit blasted to white metal. Surfaces which show any traces of oil must be degreased with a chemical degreaser prior to grit blasting.

MIXING

Care should be taken to ensure that **Condur EA1/SB** is mixed thoroughly. The hardener and the resin components should first be stirred separately to disperse any settlement. The entire contents of the hardener tin should then be poured into the resin tin and the two components mixed thoroughly using a low-speed drill and paddle for at least 2 minutes until a uniform colour is obtained.

APPLICATION

Apply the mixed **Condur EA1/SB** with a notched rowel, putty knife, caulking gun or by hand, etc. depending upon the application. Bonded surfaces should be held rigidly together until the **Condur EA1/SB** has set.

CLEANING

All tools and equipment should be cleaned immediately after use with Cormix Cleaner. Hardened material can only be removed mechanically.

CONSUMPTION

Condur EA1/SB Paste: 1.80 kg/m^2 for 1 mm thickness.
Condur EA1/SB Pourable: 1.70 kg/m^2 for 1 mm thickness.

PACKAGING

1.5 kg set and 6.0 kg set. Two component packs.

STORAGE & SHELF LIFE

Condur EA1/SB has a shelf life of 12 months when stored in a dry place below 35ºC in unopened containers.

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **do not** induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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CONTACT DETAILS

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Condur ® EA2

2 COMPONENT EPOXY RESIN BONDING AGENT FOR BONDING WET CONCRETE TO EXISTING CONCRETE

DESCRIPTION

A two component solvent free epoxy bonding agent. The base component is white and the hardener component is black providing visual evidence of adequate mixing. Conforms to ASTM C881-78 Type II Grade 2 Class B & C.

Complies to EN1504 Part 9, Part 3 and Part 4
- Principle 3 : Concrete Restoration (CR). Method 3.4 – Replacing Elements.
- Principle 4 : Structural Strengthening. (SS) Method 4.4 – Adding Mortar or Concrete.
- Principle 5 : Increase in Physical Resistance (PR). Method 5.3 – Adding Mortar or Concrete.

USES & ADVANTAGES

Condur EA2 is used for bonding fresh wet cementitious materials to existing cementitious surfaces. Typical uses include structural bonding of new to existing concrete and as a bonding agent on concrete, mortar, steel and iron etc. It is ideally suited for roads, bridges, pavements, loading bays and factories. **Condur EA2** may also be used as part of a repair system or a repair barrier in permanently wet or damp areas.

Advantages include:-
- Can be applied on to dry or damp substrates.
- Solvent free.
- Long pot life therefore suitable where formwork or additional reinforcement has to be installed.
- Unaffected by moisture.
- Exhibits high mechanical strength.
- Easy to apply.
- Exceeds the tensile strength of the host concrete.

PROPERTIES

Appearance :	Base : White Hardener : Black
Pot life :	60-90 mins.
Specific gravity (mixed) :	1.45 - 1.47
Initial hardness :	2 - 4 hours
Full cure :	7 days
Max.overlay time :	4 - 5 hours.
Compressive strength :	$\geq$ 60 N/mm^2 at 7 days
Flexural strength :	35-45 N/mm^2
Shear strength :	$\geq$ 20 N/mm^2
Bond strength to concrete :	$\geq$ 2 N/mm^2 (concrete failure)
Bond strength to steel :	15 - 20 N/mm^2

Note: Properties measured at 25°C. Data quoted typical for this product does not constitute a specification. To obtain performance characteristics stated in this data sheet, the mixing ratio must be maintained.

SUBSTRATE PREPARATION

Clean the surface and remove any dust, unsound material, plaster, oil, paint, grease, corrosion deposits or algae. Roughen the surface and remove any laitance and expose aggregate by light scabbling or grit-blasting. Oil and grease deposits should be removed by steam cleaning, detergent scrubbing or a proprietary degreaser. The effectiveness of decontamination and soundness of the substrate should then be assessed by a pull-off test.

MIXING

Any steel reinforcement and formwork should be prepared, cut to size and shape, and made ready for assembly before mixing commences.
Care should be taken to ensure that **Condur EA2** is thoroughly mixed. The "hardener" and "base" components should be stirred separately before mixing to disperse any settlement. The entire contents of the "hardener" tin should then be poured into the "base" tin and the two materials thoroughly mixed using a suitable slow speed drill and mixing paddle for about 2 minutes until a fully uniform colour is obtained. The sides of the tin should then be scraped and mixing should continue for a further 2 minutes.

APPLICATION

Condur EA2 should be applied as soon as the mixing process has been completed. It should be brush or spray-applied to the prepared surfaces. On damp surfaces ensure that it is well brushed in.
The new concrete or screed should be applied to the coated substrate within 4-5 hrs at 30°C.
At ambient temperatures above 30°C, the material should be stored in the shade or in an air-conditioned environment for 12 hours before use.

ESTIMATING

Condur EA2 covers 0.45 kg/m^2 depending on the porosity and surface of substrate with no allow once for wastage.

CLEANING

Clean all tools immediately after use with Cormix Cleaner. Hardened material can only be removed mechanically.

PACKAGING

1.5 and 6.0 kg. two component packs.

STORAGE & SHELF LIFE

Condur EA2 has a shelf life of 12 months if kept in a dry store in the original unopened packs.
If stored at high temperatures, the shelf life may be reduced.

Condur ® EA2

2 COMPONENT EPOXY RESIN BONDING AGENT FOR BONDING WET CONCRETE TO EXISTING CONCRETE

HEALTH & SAFETY

Ensure adequate ventilation and avoid inhalation of vapours. Wear suitable protective clothing, gloves and eye protection. Remove from skin immediately with resin removing cream and wash with soap and water. Do not use solvent.
If poisoning occurs, contact a Doctor or Poisons Information Centre.
If swallowed, do NOT induce vomiting give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

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Condur ® FEA

TWO COMPONENT MULTIPURPOSE FLEXIBLE EPOXY ADHESIVE AND SEALANT

DESCRIPTION

Condur FEA is supplied as a two component, solvent free epoxy system. It consists of base, which is white in colour and hardener which is black colour.
Condur FEA is smooth, grit free with non-sag consistency. This is an ideal product for vertical and overhead applications.

USES & ADVANTAGES

Condur FEA is designed for application to minor imperfections from feather edge to 3 mm. or as a joint sealant. It can be used in the following situations:

- Concrete & masonry surface imperfections.
- Filling pinholes prior to overcoating.
- Sealing of surface cracks, which is required during crack injection works.
- Joint sealant.
- Void filling.
- Sealing cracks where flexibility needed.

Advantages include:-

- Moisture insensitive.
- Good chemical resistance.
- Easy to use.
- Excellent bonding to the substrate.
- No curing is required.
- Multipurpose adhesive with non-sag properties.
- Contains no grit & very smooth finish.
- Good bonding to various substrate such as concrete, masonry, stone, steel, wood, etc.
- Does not sag or run in vertical/overhead applications.

PROPERTIES

Component : Two Part A -Base
Part B -Hardener
Colour : Part A - white
Part B - black
Colour of mix : Grey
Solids by weight : 100%
Consistency : Non-Sag
Potlife : 30-45 mins.
Shore A Hardness : 40 A
Bond Strength : > 2.5 N/mm^2 @7 days
(ASTM D4541) (Concrete failure)
Mix ratio A:B : 1.8 : 1 by volume.
Tensile Elongation : 88 %
(ASTM D638)

SETTING TIMES

Working life and setting time will vary depending on ambient and substrate temperatures.

SUBSTRATE PREPARATION

All grease, oil, chemical contamination, dust, laitance and loose concrete must be removed by scabbling or light bush hammering to provide a sound substrate.
Concrete must be at least 14 days old prior to treatment.
Steel surfaces should be grit blasted to white metal.
Surfaces which show any traces of oil must be degreased with a chemical degreaser prior to grit blasting.

MIXING

In order to produce a fully homogeneous paste, proper care should be taken to ensure that **Condur FEA** is thoroughly mixed.
Both the hardener and base components should be stirred thoroughly during mixing in order to disperse the material.
The entire contents of the hardener should be emptied into the base container and the components mixed together using a mixing paddle attached to a slow-speed (400 rpm) heavy duty drill, mix until a consistent uniform grey color paste is obtained.
Under no circumstances should part packs be used or part mixing be attempted.

APPLICATION

A variety of tools such as trowel, scraper, filling knife can be used. Apply the mixed **Condur FEA** to the prepared substrate. After mixing, material can be taken directly from the can or subdivided onto spot boards for individual application.
If a very smooth finish is required, a small amount of solvent may be flicked on to the surface of the **Condur FEA** with a paint brush prior to final trowelling.
Condur FEA can be overcoated with all epoxy or polyurethane coatings after a minimum curing period of 24 hours prior to overcoating, the surface of the fully cured
Condur FEA should first be abraded to assist adhesion and then cleaned to a dust-free finish.
Do not proceed with the application when rainfall is imminent unless in a sheltered or protected situation.

CLEANING

All tools and equipment should be cleaned immediately after use with **Cormix Cleaner**. Hardened material can only be removed mechanically.

PACKAGING

3 kg pack. Other packsizes available on request.

Condur ® FEA

TWO COMPONENT MULTIPURPOSE FLEXIBLE EPOXY ADHESIVE AND SEALANT

COVERAGE

Approx. 1.08 kg/m^2/mm with no allowance for wastage.

STORAGE & SHELF LIFE

Condur FEA has a shelf life of 12 months when stored in a dry place below 35 °C in unopened containers

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **DO NOT** induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes.
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CORMIX
One step ahead

(4.4)

Steel Corrosion Protection & Corrosion Inhibitors

The Construction Chemicals Specialist

Conpatch ® NCI

SURFACE APPLIED MIGRATING CORROSION INHIBITOR

DESCRIPTION

Conpatch NCI is a surface applied migratory corrosion inhibitor, designed to migrate even through dense concrete structures forming a protective layer on the surface of the reinforcement. **Conpatch NCI** can be used in reinforced concrete structures that show signs of reinforcement corrosion or need additional protection to inhibit future corrosion. It protects the steel by forming a protective layer and reduces the corrosion rate.

Conpatch NCI is applied to the surface and drawn into the concrete via capillary action. Additionally **Conpatch NCI** moves throughout the concrete pore structure following Fick's law, molecules move randomly in vapour phase through the cement matrix from areas of high concentration to areas of low concentration.

Conpatch NCI is adsorbed on to the reinforcement at depths of up to 8 cm and beyond forming a layer up to 100°A thick. Chlorides are shown to penetrate 60 mm. deep confirming the ability of **Conpatch NCI** to displace chlorides providing protection at the reinforcements surface despite the presence of chlorides.

The rate of migration is dependent on the density & permeability of the concrete and other factors, however, it is between 7-8 cm at 7 days.

Complies to EN1504 Part 9

- Principle 9 : Cathodic Control (PI).
  Method 9.1 – Limiting oxygen content (at the cathode) by saturation or surface coating.
- Principle 11 : Control of Anodic Areas (CA).
  Method 11.3 – Applying corrosion inhibitors on concrete.

USES & ADVANTAGES

Migratory corrosion inhibitor's are useful for repair and maintenance purposes and the treatment of undamaged concrete where corrosion induced damage is anticipated due to chloride or carbonation attack.

Conpatch NCI extends the service life of the structure both below and above ground structures. It can be used for all type of buildings, marine structures, car parks, bridges, dams, water tanks, cooling towers, etc.

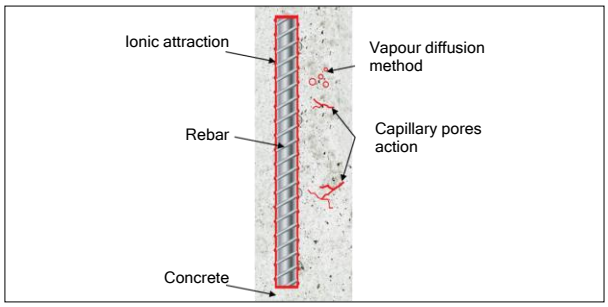
Advantages include:-

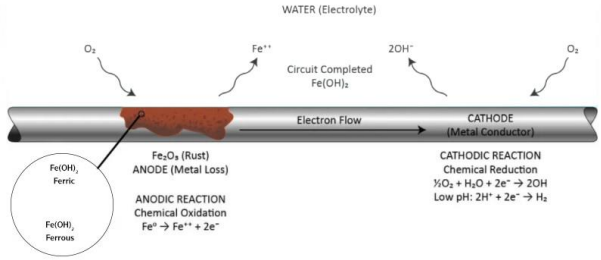
- Protection of concrete steel reinforced structures.
- Non staining.
- Low viscosity ensures good in depth penetration through capillary pores.
- Both delays, the start of corrosion and reduces the corrosion rate.
- Easy to apply and economical.
- Extension of service life and long term protection.
- Safe and environment friendly.
- Protects both cathodic and anodic areas.
- No special curing time required traffic can resume immediately after application.
- Water based and non flammable.
- Can perform on other metals such as galvanized steel, aluminum, coated steel.
- Use is combination with Contite waterproofing by crystallization for total concrete protection (rebar & cement paste).

PROPERTIES

Form:	Liquid
Appearance:	Yellow to Amber colour
Density:	1.10 ± 0.02 Kg/Ltr
pH:	9 to 11
Flash Point:	Not applicable (water based)
Drying time:	30 - 40 mins
Re coat time:	40 - 60 mins

Schematic Representation of **Conpatch NCI** by Vapour diffusion system and penetration through capillary pores.





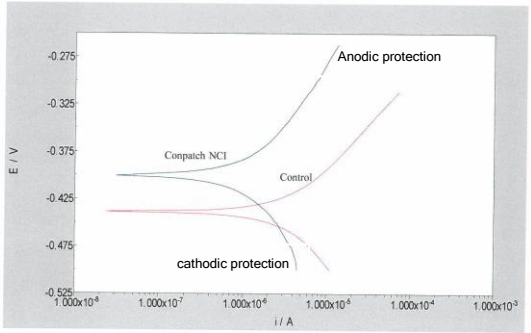


Fig.1 Polarization curve of the steel sample treated with the Conpatch NCI and the Control (not treated) in 5%NaCl solution.

Conpatch ® NCI

SURFACE APPLIED MIGRATING CORROSION INHIBITOR

SURFACE PREPARATION

Substrate should be dry, sound, clean and free of all dirt, grease, oil, laitance, sealers, coatings, curing compounds, membranes, etc. Cleaning can be done by use of mechanical equipment or by using jet water blast.

APPLICATION

Conpatch NCI can be applied either by using a brush, roller or low pressure spray equipment. For better performance at least 2 coats are required. The recoat time between coats is around 40-60 minutes.
Application should be done +5 to +30° C.
Conpatch NCI can also be applied by using an injection method to ensure fast and deep penetration into thick structures and speeding up work.

COVERAGE RATE

Approximately 3.5 to 4 m^2 /ltr/coat, depending upon surface texture, porosity and absorption of concrete. Generally 2-4 coats are required.

CURING

Conpatch NCI does not require any special curing and if required can be opened for traffic after a few minutes of application.

PACKAGING

25 Ltr pails and 200 Ltr drums.

LIMITATIONS

Before and after application the surface should be protected from rain and frost. Application should be done above freezing point.
NOTE : For complete and entire concrete corrosion protection system please contact Cormix Technical Department.

STORAGE CONDITIONS & SHELF LIFE

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

HEALTH & SAFETY

Eye contact: Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Eyelids should be held away from the eyeball to ensure thorough rinsing. Obtain medical attention urgently.
Skin contact: Wash skin thoroughly with soap and water. Obtain medical attention if blistering occurs or redness persists. Contaminated clothing should be washed or dry-cleaned before re-use.
Ingestion: Do not induce vomiting. Wash out mouth with water. If vomiting occurs naturally, lean victim forward to reduce risk of aspiration.
Obtain medical attention urgently.
Inhalation: Remove from exposure. In cases of possible respiratory irritation or if feeling unwell due to prolonged exposure, obtain medical attention.

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Congard ® Zinc

2 COMPONENT EPOXY ZINC PRIMER

DESCRIPTION

Congard Zinc is a two component, metallic zinc epoxy primer for use with Conpatch concrete repair systems or steel coatings to provide a protective and anti-corrosive coating.

USES & ADVANTAGES

Congard Zinc is intended for use as a zinc primer as part of a repair or coating system for structures in aggressive environments in a wide range of industries, including offshore facilities, petrochemical plants, pulp and paper mills, bridges, power plants and marine structures.

Congard Zinc has been designed for use in maintenance and repair situations and as a primer in new construction. It is used as an anti-corrosion primer for reinforcement to be used in conjunction with Cormix repair products and grout.

Advantages include:-

- Use with Cormix repair systems.
- May use with steel coating systems.
- Long pot life.
- Touch dry within 15-45 minutes.
- High coverage rate.
- Apply by brush or spray.

PROPERTIES

Component: Two Part A - Base
Part B - Hardener

Colour: Grey (When mixed)

Mix Density: 2.14±0.05 kg/ltr

Potlife: 120±10 mins

Gloss Level: Matt

Volume Solids: 59%

Typical Thickness: 50 - 75 microns (2-3 mils)

Practical Coverage: 4.5 - 5.5 M^2/kg at 50 microns d.f.t. and stated volume solids.

Method of Application: Airless spray, Air spray, Brush, Roller.

Bond Strength:

On Concrete Surface ASTM D4541: 7 days > 2.00 N/mm^2 (concrete failure)

On Steel Surface ASTM D4541: 7 days > 5.00 N/mm^2

Drying Time:

Temp.	Touch Dry	Hard Dry	Over coating Interval with Recommended Top Coats Min.	Max.
23°C	30 mins.	1 hr.	4 hrs.	Indefinite
35°C	20 mins.	30 mins.	2 hrs.	Indefinite

Compliances: BS4652 : Type 2

Flash Point: Greater than 23°C for both Components & mixed paint.

SUBSTRATE PREPARATION

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application all surfaces should be assessed and treated in accordance with ISO 8504-1992.

Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

Abrasive Blast Cleaning - Steel

Abrasive blast clean to Sa2.5 (ISO 8501-1: 1998) or SSPC-SP6. If oxidation has occurred between blasting and application of **Congard Zinc**, the surface should be reblasted to the specified visual standard. Surface defects revealed by the blast cleaning process should be ground, filled, or treated in the appropriate manner. A surface profile of 40 -75 microns (1.5-3.0 mils) is recommended.

Concrete Repair - Steel Reinforcement Coating

Expose fully any corroded steel in the repair area and remove all loose scale and corrosion deposits. Steel should be cleaned to a bright condition paying particular attention to the back of exposed steel bars. Grit-blasting is recommended for this process.

Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water immediately after grit-blasting to remove corrosion products from pits and imperfections within its surface.

MIXING

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed it must be used within the working pot life specified.

1) Agitate Base (Part A) with a power agitator

2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

MIX RAITIO

Part A : Part B = 5 : 1 by weight.

APPLICATION

Congard Zinc should be applied to the rebar or steel as soon as possible after preparation work and the steel is dry.

Apply one unbroken coat. In concrete repair situations ensure the rebar is coated at the back surface. If the coat is broken reapply a second coat after the first is dry (between 30 and 60 minutes).

The primed surface should be overcoated or covered with repair material if outside within 2 weeks. If in industrial or marine environments the interval should be reduced to the minimum possible.

The installation of concrete repair materials should take place as soon as **Congard Zinc** is fully dry (30 to 60 minutes).

Congard ® Zinc

2 COMPONENT EPOXY ZINC PRIMER

Airless Spray :
Recommended - Tip range 0.43-0.53mm. (17 -21 thou.)
- Total output fluid pressure 2,500 p.s.i

Conventional Spray: Suitable
Brush or Roller: Suitable
Thinner Congard Thinner
Cleaner Congard Cleaner
Work Stoppages:
Do not allow material to remain in hoses, gun or spray equipment. Once units of paint have been mixed, they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

CLEANING

Clean all equipment immediately after use. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays.

PACKAGING

Supplied in pre-measured 2.5 kg/set &10 kg/set kit.

STORAGE & SHELF LIFE

Congard Zinc has a shelf life of 12 months if kept in a dry store in the original, unopened containers. If stored at high temperature and/or high humidity conditions the shelf life may be reduced.

HEALTH & SAFETY

Congard Zinc should not come in contact with the skin and eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapours. Wear suitable protective clothing, gloves and eye protection. If working in confined areas, suitable respiratory protective equipment must be used. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of skin contact with **Congard Zinc** remove immediately with resin removing cream followed by washing with soap and water. Do not use solvent. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately - **do not induce vomiting**.

Fire: Congard Zinc is flammable. Keep away from sources of ignition. In the event of fire, extinguish with CO_2 or foam. Do not use a water jet. Avoid smoking.

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 : 2015 verified by TUV Nord

ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

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Congard ® ST

2 COMPONENT EPOXY COATING FOR REINFORCEMENT

DESCRIPTION

A two component high build, high solids epoxy coating for rebar and maintenance work. Available in aluminium pigmented version to provide additional corrosive barrier protection.

USES & ADVANTAGES

Congard ST is a surface tolerant product used in a wide variety of applications and for various substrates including hand prepared rusty steel, rebar, abrasive blast cleaned and hydro blasted steel, and over existing intact but aged coatings.
Areas of use include anti corrosive protection to steel and rebar in industrial, coastal structures, pulp and paper plants, bridges and offshore environments in both atmospheric exposure and immersion.

Advantages include:-

- High build.
- May use on hand prepared rebar & steel.
- May use with steel coating systems.
- High coverage rate : 6m^2/litre
- Economical.
- Apply by brush, roller or spray.
- Small packaging for small jobs - low wastage.
- May use with Cormix repair systems.
- Two Part.
- Rapid drying.
- One coat application possible.

PROPERTIES

Appearance/Colour:	Aluminium
Gloss Level:	Eggshell
Volume Solids:	80-85% (depends on colour)
Typical Thickness:	100-200 microns (4-8 mils) dry equivalent to 122-244 microns (4.9-9.8 mils) wet.
Theoretical Coverage:	6.5 m^2/litre at 125 microns d.f.t. and stated volume solids.
Practical Coverage:	Allow appropriate loss factors.
Method of Application:	Airless spray, air spray, brush, roller.

Drying Time:

			Overcoating Interval **Congard ST** with self		Overcoating Interval with Recommended topcoats	
Temp.	**Touch Dry**	**Hard Dry**	**Min.**	**Max.**	**Min.**	**Max.**
25ºC	4 hrs.	16 hrs.	16 hrs.	14 days	8 hrs.	7 days
40ºC	2 hrs.	6 hrs.	6 hrs.	7 days	4 hrs.	3 days

Flash Point:	Base (Part A) 36ºC	C/A (Part B) 31ºC	Mixed 35ºC

SUBSTRATE PREPARATION

The performance of this product will depend upon the degree of surface preparation. The surface to be coated should be clean, dry and free from contamination.
Accumulated dirt and soluble salts must be removed. Dry bristle brushing will normally be adequate for accumulated dirt. Soluble salts should be removed by fresh water washing.

Abrasive Blast Cleaning

Surface defects revealed by the blast cleaning process, should be ground, filled, or treated in the appropriate manner.
A surface profile of 50-75 microns (2-3 mils is recommended).

Hand or Power Tool Preparation

Note, all scale must be removed and areas which cannot be prepared adequately by chipping or needle gun should be spot blasted.

Aged Coating

Congard ST is suitable for overcoating a limited range of intact, tightly adherent coatings. Loose or flaking coatings should be removed back to a firm edge. Glossy finishes may require light abrasion to provide a physical “key”.

MIXING/ APPLICATION

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed it must be used within the working pot life specified.
(1) Agitate Base (Part A) with a power agitator.
(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

Mix Ratio:	4 : 1 by weight.
Working Pot Life:	25ºC 40ºC 2 hours 1 hour

Airless Spray:

Recommended	- Tip range 0.45-0.58 mm. (18-23 thou) - Total output fluid pressure at spray tip not less than 176 kg/cm^2 (2,500 p.s.i.)

Air Spray (Pressure Pot):

Recommended	Gun De Vilbiss MBC or JGA Air Cap 704 or 765 Fluid Tip E

Brush:

Recommended	Typically 100-125 microns (4-5 mils) can be achieved.

Roller:

Recommended	Typically 75-100 microns (3-4 mils) can be achieved.
Thinner:	Cormix Thinner
Cleaner:	Cormix Cleaner

Congard ® ST

2 COMPONENT EPOXY COATING FOR REINFORCEMENT

Clean all equipment immediately after use with **Congard Thinner**. It is good working practice to periodically flush out spray equipment during the course of the working day. In order to achieve optimum performance on hand prepared steel, the aluminium pigmented version should be applied.
Maximum film build in one coat is best attained by airless spray. Application by air spray may require a multiple cross spray pattern to attain maximum film build. Low or high temperatures may require specific application techniques to achieve maximum film build.
If salt water is used in the wet blast process the resulting surface must be thoroughly washed with fresh water before application of **Congard ST**.
Congard ST is suitable for overcoating intact, aged alkyd, epoxy and polyurethane systems. However, this product is not recommended where thermoplastic coating such as chlorinated rubbers and vinyl have previously been used. Please consult Cormix International for alternative recommendations.
Surface temperatures must always be a minimum of 3ºC (5ºF) above dew point.
Level of sheen and surface finish is dependent on application method. Avoid using a mixture of application methods whenever possible.
In common with all epoxies **Congard ST** will chalk and discolour on exterior exposure. However, these phenomena are not detrimental to anti-corrosive performance.
Premature exposure to ponding water will cause a colour change, especially in dark colours.

PACKAGING

5 and 20 litre units in oversized cans for mixing.
For availability of other pack sizes contact Cormix International Limited.

STORAGE & SHELF LIFE

12 months minimum at 25ºC. Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.

HEALTH & SAFETY

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given on this sheet, the Material Safety Data Sheet and the container(s).
All work involving the application and use of this product should be performed in compliance with all relevant National, Health, Safety & Environmental standards and regulations.
In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.
If in doubt regarding the suitability of use of this product, consult Cormix International Ltd. for further service.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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CORMIX
One step ahead

(4.5)

Structural Strengthening of Concrete

The Construction Chemicals Specialist

Condur ® CF Plate

CARBON FIBRE REINFORCEMENT PLATE SYSTEM

DESCRIPTION

Condur CF Plate is a carbon fibre reinforced polymer laminate used for strengthening structures bonded externally by **Condur CF Adhesive**.
Complies to EN1504 Part 9 and EN1504 Part 4
- Principle 4 : Structural Strengthening (SS).
  Method 4.3 – Plate Bonding.

USES & ADVANTAGES

Typical uses include strengthening of structures where there are load increases anticipated, structural repairs, modification of the structure or modifying errors in planning or construction.
The following concrete structures are typical areas of application: Bridges, Piers, Parking Structures, Tunnels, Silos, Chimneys, Dams, Tanks and Slabs, Beams and Columns in buildings. Applications may be grouped as follows:-

Load Increases
- Higher live load
- Increased wheel loads
- Installation of heavier machines
- Vibration
- Less deformation

Modification of structural system
- Elimination of walls / columns
- Openings cut into slabs

Improvements in suitability for use
- Limitation of deflections
- Reduction of stress in steel reinforcement
- Reduction of crack widths

Damage to structural parts
- Ageing of construction materials / damage caused by fire
- Corrosion of steel reinforcement
- Impact of vehicles

Errors in planning or construction
- Insufficient design dimensions
- Insufficient reinforcing steel section

Advantages include:
- High strength and high modulus.
- 10 times the tensile strength capacity of steel.
- Light weight. Minimal additional dead load.
- Does not corrode. High durability low maintenance.
- Minimal increase in member geometry.
- Easy to hide and overcoat.
- Flexible easy to install on difficult shapes.
- Easy to install minimal down time.
- Chemical resistance.
- Neutralizes the effect of cracks.
- Applied to cracks on concrete surface improves.
- Increased flexural strength.
- Significally fracture strength.
- Applied to lower tension surface of reinforced concrete beam provides substantial strength improvements.
- Improved lateral compression strength of cylindrical structures.
- Encasement of columns for seismic protection.
- Improves a structures ability to withstand lateral distortion and buckling.

APPLICATION METHOD

1. SURFACE PREPARATION

Ensure that the concrete surface is clean and sound. Remove all contaminates including coatings, grease, oil, dirt, excessive laitance, salts and unsound material by grinding, hammering, etc. Where necessary degrease with chemical degreaser.
Any structural cracks should be injected with **Condur SC** epoxy resin injection material.
Note:- *Unsound deteriorated concrete that occurred as a result of corrosion of rebars, needs to be removed to behind rebar. Corroded rebar to be cleaned with rust remover. Apply* ***Congard Zinc*** *or* ***Congard ST*** *on cleaned rebar as a corrosion protective coating. Apply* ***Condur EA2*** *as a bonding bridge on the prepared concrete surface. Apply* ***Conpatch 600MCI*** *over* ***Condur EA2*** *bonding bridge to bring back to the profile of the concrete.*
The recommended minimum concrete pull off test after surface preparation is 1.5 N/mm^2 and should be tested.

2. MIXING

Mix part A and B of **Condur CF Adhesive** together at the ratio 1:1 by weight for at least 3 minutes with a (300-400 r.p.m.) slow speed electric drill. Avoid entraining air. Use all material within its pot life. The greater the quantity mixed the shorter will be the pot life. The pot life is longer at lower temperatures & shorter at higher temperatures. The pot life of **Condur CF Adhesive** is typically 50 minutes @23ºC.

3. Condur CF Plate application

Apply **Condur CF Adhesive** to the substrate with a notched trowel or spatula/scraper at a thickness of ap-proximately 1 mm.
Clean the side of **Condur CF YC-CFRP(S) Plate** to be applied to the concrete and apply 1-2 mm thickness of **Condur CF Adhesive** to the plate using a spatula.
Within the open time of the **Condur CF Adhesive** place the **Condur CF YC-CFRP(S) Plate** on to the prepared substrate and press firmly into the Adhesive using a hard rubber roller. Ensure excess material is forced out of both sides of the plate.
In case of **Condur CF YC-CFRP(S) Plate** intersections allow the 1st application to harden before application of the 2nd plate and clean the over lapping plate's surface before application of **Condur CF Adhesive.**

Note :

- Condur CF system *should only be applied by specialist applicators who have had training in the installation of this system. Cormix International can provide such training & a list of approved applicators.*

Condur ® CF Plate

CARBON FIBRE REINFORCEMENT PLATE SYSTEM

PROPERTIES

TYPE	WIDTH	THICKNESS	CROSS SECTIONAL AREA
Condur CF YC- CFRP(S)Plate	100 mm	1.2 mm	120 mm^2
	50 mm	1.2 mm	60 mm^2
	50 mm	1.4 mm	70 mm^2
Properties	**Result**	**Test Method**	
Appearance	Black Colour	-	
Fibre Volumetric Content	> 68 %	-	
Tensile Strength	2511 Mpa	ASTM D 3039	
E Modulus	170 GPa	ASTM D 3039	
Elongation Strain at Break	1.71 %	ASTM D 3039	
Density	1.5 gm/cm^3	-	

TYPE	WIDTH	THICKNESS	CROSS SECTIONAL AREA
Condur CF YC- CFRP(S) (HP) Plate	100 mm	1.2 mm	120 mm^2
	100 mm	1.4 mm	140 mm^2
Properties	**Result**	**Test Method**	
Appearance	Black Colour	-	
Fibre Volumetric Content	> 68 %	-	
Tensile Strength	>2800 Mpa	ASTM D 3039	
E Modulus	160-170 GPa	ASTM D 3039	
Elongation Strain at Break	> 1.50 %	ASTM D 3039	
Density	1.5-1.6 gm/cm^3	-	

Notes on Applications and Limitations

Samples: - Witness samples should be made at site and tested in a laboratory to ensure the material meets the responsible designer's requirement.

Dew Point: Substrate temperature should be at least 3ºC above the dew point.
The ambient temperature should be above 8ºC.

The product should only be used by experienced professionals. In hot or cold conditions precondition the product 24 hours before use.

Protect from rain for 24 hours after application.
Consult a structural engineer for load calculations & design.
A qualified structural engineer must be responsible for designing the works. Care must be taken is selecting suitably experienced and trained contractors
Protect from permanent exposure to direct sunlight moisture & or water.

CONSUMPTION of Condur CF Adhesive

Approx. 1.5 kg/m^2 @1 mm thickness.

PACKAGING

Condur CF Plate YC-CFRP(S) = 1.2 mm x 50mm x 100 m (100 m) per roll.
Condur CF Plate YC-CFRP(S) = 1.2 mm x 100mm x 100 m (100 m) per roll.
Condur CF Plate YC-CFRP(S) = 1.4 mm x 50mm x 100 m (100 m) per roll.
Condur CF Plate YC-CFRP(S) = 1.4 mm x 100mm x 100 m (100 m) per roll.

Other sizes available on request.

STORAGE & SHELF LIFE

Unlimited providing not exposed to direct sunlight stored in dry conditions in original packaging at temperatures less than 50ºC.

Condur ® CF Plate

CARBON FIBRE REINFORCEMENT PLATE SYSTEM

HEALTH & SAFETY

Refer to advise on the safe handling, storage & disposed of the material in the MSDS available from Cormix International Ltd.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Condur ® CF Adhesive

A SOLVENT FREE MOISTURE INSENSITIVE ADHESIVE FOR BONDING CONDUR CF REINFORCEMENT

DESCRIPTION

A two component Solvent Free, 100% Solids, moisture insensitive structural Thixotropic Epoxy Adhesive.
Complies to EN1504 Part 9 and EN1504 Part 4

- Principle 4 : Structural Strengthening (SS).
  Method 4.1 – Adding or replacing embedded or external reinforcing steel bars.
  Method 4.3 – Plate Bonding.

USES & ADVANTAGES

An adhesive for the bonding of **Condur CF** structural reinforcement plates.

Advantages include:

- High early strength without shrinkage.
- 100% Solids (No Volatile Organic Content)
- High strength.
- Impermeable to liquids.
- Two pack colour coding gives visual check on correct mixing.
- Non sag easy to apply.
- Unaffected by wide range of acids, alkalis and industrial chemicals.
- High mechanical, abrasion and shock resistance.
- Excellent adhesion to many substrates.
- No primer required.

PROPERTIES

Appearance :	Colour	Part A : black paste Part B : white paste
Mix Ratio:		1:1 by weight
Pot Life :		50 min @23ºC ASTM C881
Density Mixed :		1.5±0.05 Kg/Lit @23+ºC
Sag :		Non sag on vertical surface up to 5 mm thickness @ 35ºC (F.I.P.)
Open time :		70-80 min @ 23ºC
Full Cure :		7 Days @23ºC
Compressive Strength :		
1 day	75 N/mm^2	ASTM C579
7 days	85 N/mm^2	ASTM C579
Tensile Strength :		@23ºC
7 days	24.7 N/mm^2	ASTM D638
Flexural Strength :		@23ºC
7 days	42.9 N/mm^2	ASTM C580
Bond Strength by Slant Shear :		@23ºC
7 days	>4 N/mm^2 (Concrete failure)	ASTM C882

**Properties are typical under laboratory conditions and do not constitute a specification.

SYSTEM AND APPLICATION DETAILS

1) Substrate preparation

Ensure that the concrete surface is clean and sound. Remove all contaminates including coatings, grease, oil, dirt, excessive laitance, salts and unsound material by grinding, hammering, etc. Where necessary degrease with chemical degreaser.

Any structural cracks should be injected with **Contite PUE300/301** moisture tolerant polyurethane resin.

Note:

*- Unsound deteriorated concrete that occurred as a result of corrosion of rebars, needs to be removed to behind rebar. Corroded rebar to be cleaned with rust remover. Apply **Congard ST** on cleaned rebar as a corrosion protective coating. Apply **Condur EA2** as a bonding bridge on the prepared concrete surface. Apply **Conpatch 600MCI** over **Condur EA2** bonding bridge to bring back the profile of concrete.*

2) MIXING

Mix part A and B of **Condur CF Adhesive** together at the ratio 1:1 by weight for at least 3 minutes with a (300-400 r.p.m.) slow speed electric drill. Avoid entraining air. Use all material within its pot life. The greater the quantity mixed the shorter will be the pot life. The pot life is longer at temperatures below 15 ºC & shorter at high temperatures above 30 ºC. The pot life of **Condur CF Adhesive** is typically 50 minutes @23ºC.

3) Condur CF adhesive application on Condur CF plate

Apply **Condur CF Adhesive** to the substrate with a notched trowel or spatula/scraper at a thickness of approximately 1 mm.

Clean the side of **Condur CF YC-CFRP(S) Plate** to be applied to the concrete and apply 1-2 mm thickness of **Condur CF Adhesive** to the plate using a spatula.

Within the open time of the **Condur CF Adhesive** place the **Condur CF YC-CFRP(S) Plate** on to the prepared substrate and press the plate firmly into the Adhesive using a hard rubber roller. Ensure excess material is forced out of both sides of the plate.

In case of **Condur CF YC-CFRP(S) Plate** intersections allow the 1st application to harden before application of 2nd plate and clean the over lapping plate surface before application of **Condur CF Adhesive.**

Note :

*-**Condur CF system** should only be applied by specialist applicators who have had training in the installation of this system. Cormix International can provide such training & a list of approved applicators.*

CLEANING

All tools & equipment should be cleaned immediately after use with Cormix Cleaner. Hardened material can be removed mechanically.

LIMITATIONS

Samples: - Witness samples should be made at site and tested in a laboratory to ensure the material meets the responsible designers requirement.

Condur ® CF Adhesive

A SOLVENT FREE MOISTURE INSENTIVE ADHESIVE FOR BONDING CONDUR CF REINFORCEMENT

Dew Point: The substrate temperature should be at least 3ºC above the dew point.
The ambient temperature should be above 8ºC.

The product should only be used by experienced professionals. In hot or cold conditions precondition the product 24 hours before use.

Protect from rain for 24 hours after application.
Consult a structural engineer for load calculations & design.
A qualified structural engineer must be responsible for designing the works. Care must be taken is selecting suitably experienced and trained contractors
Protect from permanent exposure to direct sunlight moisture & or water.

CONSUMPTION RATE

Approximately 1.5 kg/m^2 @ 1 mm Thickness

PACKAGING

Condur CF Adhesive : 10 kg set

STORAGE & SHELF LIFE

Condur CF adhesive has a shelf life of 12 months from date of production if stored properly in original unopened, containers in dry conditions at temperature between +5ºC to 35ºC protected from direct sunlight.

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **do NOT** induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes. If skin contact occurs, remove contaminated clothing and wash skin thoroughly.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Condur ® CF Fabric

UNIDIRECTIONAL WOVEN CARBON FIBRE FABRIC

DESCRIPTION

A unidirectional woven Carbon Fibre Fabric for structural strengthening.
Complies to EN1504 Part 9 and EN1504 Part 4
- Principle 4 : Structural Strengthening (SS).
  Method 4.3 - Plate Bonding.

USES & ADVANTAGES

Typical uses include strengthening of structures where there are load increases anticipated, structural repairs, modification of the standard system or modifying errors in planning or construction. Applications may be grouped as follows:-

Load Increases
- Higher live load
- Increased wheel loads
- Installation of heavier machines
- Vibration
- Less deformation

Modification of structural system
- Elimination of walls / columns
- Openings cut into slabs

Improvements in suitability for use
- Limitation of deflections
- Reduction of stress in steel reinforcement
- Reduction of crack widths

Damage to structural parts
- Ageing of construction materials / damage caused by fire
- Corrosion of steel reinforcement
- Impact of vehicles

Errors in planning or construction
- Insufficient design dimensions
- Insufficient reinforcing steel section

Advantages include:
- High strength and high modulus.
- 10 times the tensile strength capacity of steel.
- Light weight. Minimal additional dead load.
- Does not corrode. High durability low maintenance.
- Minimal increase in member geometry.
- Easy to hide and overcoat.
- Flexible easy to install on difficult shapes.
- Easy to install minimal down time.
- Chemical resistance.
- Neutralizes the effect of cracks.
- Applied to cracks on concrete surface improves
- Significally fracture strength.
- Increased flexural strength.
- Applied to lower tension surface of reinforced concrete beam provides substantial strength improvements.
- Improved lateral compression strength of cylindrical structures.
- Encasement of columns for seismic protection.
- Improves a structures ability to withstand lateral distortion and buckling.

The following concrete structures are typical areas of application: Bridges, Piers, Parking Structures, Tunnels, Silos, Chimneys, Dams, Tanks and Slabs, Beams and Columns etc. in buildings.

SUBSTRATE PREPARATION

Ensure that the concrete surface is clean and sound. Remove all contaminates including coatings, grease, oil, dirt, excessive laitance, salts and unsound material by grinding, hammering, etc. Where necessary degrease with chemical degreaser.
Any structural cracks should be injected with **Condur SC** epoxy resin injection material.

Note:- *Unsound deteriorated concrete that occurred as a result of corrosion of rebars, needs to be removed to behind rebar. Corroded rebar to be cleaned with rust remover. Apply* ***Congard Zinc*** *on cleaned rebar as a corrosion protective coating. Apply* ***Condur EA2*** *as a bonding bridge on the prepared concrete surface. Apply* ***Conpatch 600 Series*** *over* ***Condur EA2*** *bonding bridge to bring back the profile of concrete.* In the case of porous substrates finish the surface defects such as pinholes with **Condur FC.**

PRIMING

Mix part A and part B of **Condur CF(HP) Impregnation** and apply at 0.2 litre/m^2 (or) 0.22 kg/m^2 by roller or brush. The pot life is typically 50-60 minutes primer will dry within 2-6 hrs.
Note: if substrate moisture is >4%, use **Floorgard Moisture Barrier** as primer. Refer TDS for More info.

MIXING

Part A : Part B = 2 : 1 by weight
Mix Part A and B of **Condur CF (HP) Impregnation** together for at least 3 minutes with a slow speed mixer (max.300 rpm). Avoid aeration while mixing. Mix only the amount that can be used within the pot life. **Condur CF (HP) Impregnation** should be applied only after 12 hrs minimum curing of **Condur CF (HP) Impregnation** used as primer.

APPLICATION

- Apply the first layer **Condur CF(HP) Impregnation** to the concrete substrate with a roller or brush at the coverage rate of approx.0.65 kg/m^2
- Apply the precut **Condur CF Fabric** firmly over the **Condur CF(HP) Impregnation** and remove entrapped air by rolling the surface of **Condur CF Fabric** 2-3 times in the direction in which it is being placed. This ensures proper impregnation of the **Condur CF(HP) Impregnation** into the **Condur CF Fabric**.
- After 2 -6 hrs @23ºC, roller apply a second layer of **Condur CF(HP) Impregnation** at the coverage rate of approx.0.25 kg/m^2 to completely seal the surface of **Condur CF Fabric**.

  Note : *Rough substrates consume more material. In the case of additional layers of* ***Condur CF Fabric****, the previous applied layer of* ***Condur CF Fabric*** *&* ***Condur CF (HP) Impregnation*** *should be cured for at least 24 hrs prior to the second layer application.*

- Full cure of the epoxy resin takes 7 days at 23ºC at lower temperatures full cure will require longer time.
- Finish with a coating if required such as **Elastoclad** (UV resistant 100% acrylic elastomeric coating).

  Note : Condur CF system *should only be applied by specialist applicators who have had training in the installation of this system. Cormix International can provide such training & a list of approved applicators.*

Condur ® CF Fabric

UNIDIRECTIONAL WOVEN CARBON FIBRE FABRIC

Properties of Condur CF Fabric - CJ20T

Properties	Result	Test Method
Roll Length	Flexible	-
Fabric Weight	200 gm/m^2	-
Fabric Width	Flexible	-
Fabric Weave	Unidirectional	-
Tensile Strength	3400 Mpa	ASTM D 3039
Tensile Modulus of Elasticity (min)	230 GPa	ASTM D 3039
Ultimate Rupture Strain (min)	1.5 %	ASTM D 3039
Nominal Thickness (minimum)	0.111 mm	-

Properties of Condur CF Fabric - CJ30T

Properties	Result	Test Method
Roll Length	Flexible	-
Fabric Weight	300 gm/m^2	-
Fabric Width	Flexible	-
Fabric Weave	Unidirectional	-
Tensile Strength	3400 Mpa	ASTM D 3039
Tensile Modulus of Elasticity (min)	230 GPa	ASTM D 3039
Ultimate Rupture Strain (min)	1.5 %	ASTM D 3039
Nominal Thickness (minimum)	0.167 mm	-

Laminate Properties (related to effective laminate thickness)

Properties		Condur CF Fabric CJ30T	Test Method
Impregnation Resin		Condur CF (HP) Impregnation	-
Laminate Thickness (Norminal)		1 mm	-
Tensile Modulus	Average	275 GPa	ASTM D 3039
Tensile Strength	Average	3018 MPa	ASTM D 3039

Notes on Applications and Limitations

Samples: - Witness samples should be made at site and tested in a laboratory to ensure the material meets the responsible designer's requirement.

The substrate & ambient temperature should be between 8°C and 36°C.The substrate temperature should be at least 3°C above the dew point.

The product should only be used by experienced professionals. In hot or cold conditions precondition the product 24 hours before use.

Protect from rain for 24 hours after application.

Consult a structural engineer for load calculations & design.

A qualified structural engineer must be responsible for designing the works. Care must be taken is selecting suitably experienced and trained contractors

Protect from permanent exposure to direct sunlight moisture & or water.

CONSUMPTION of Condur CF (HP) Impregnation

First layer on concrete: 0.65 kg/m^2.

Following layers on **Condur CF Fabric**: 0.25 kg/m^2.

PACKAGING

Condur CF Fabric CJ 20T (200 gm) = 1 m x 100 m per roll.

Condur CF Fabric CJ 20T (200 gm) = 0.5 m x 100 m per roll.

Condur CF Fabric CJ 30T (300 gm) = 1 m x 100 m per roll.

Condur CF Fabric CJ 30T (300 gm) = 0.5 m x 100 m per roll.

STORAGE & SHELF LIFE

The shelf life is 24 months from date of manufacture if stored correctly in original undamaged packaging at temperatures between 5°C-36 °C protect from sunlight.

Condur ® CF Fabric

UNIDIRECTIONAL WOVEN CARBON FIBRE FABRIC

HEALTH & SAFETY

Refer to the MSDS available from Cormix International Ltd.

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.
The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advice offered.

CONTACT DETAILS

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Condur ® CF (HP) Impregnation

A TWO PART SOLVENT FREE HIGH PERFORMANCE EPOXY IMPREGNATION SYSTEM

DESCRIPTION

A two part solvent free, 100% solids, high performance epoxy impregnation system for structural strengthening of concrete columns, roads & bridges, damaged old structures etc.
Complies to EN1504 Part 9 and EN1504 Part 4

- Principle 4 : Structural Strengthening (SS).
  Method 4.3 – Plate Bonding.

USES & ADVANTAGES

Condur CF (HP) Impregnation is used in conjunction with **Condur CF(HP) Fabric** reinforcement system
Advantages include:

- Easy application by roller.
- 100% Solids (No Volatile Organic Content)
- Excellent adhesion to various substrates.
- Very good chemical resistance.
- Easy to mix.
- Very high mechanical properties which increases load bearing capacity of structure.

PROPERTIES

Appearance :	Part A : Clear liquid Part B : Yellow brown liquid
Mix Ratio :	Part A : Part B = 2 : 1 by weight
Density Mixed :	Approx.1.10kg/ltr @23+°C
Tensile Strength :@23°C 7 days55 N/mm^2	ASTM D638
Bond Strength : 7 days≥ 2 N/mm^2 (Concrete failure)	@23°C ASTM D4541
Flexural Strength : 7 days101 N/mm^2	@23°C ASTM C580
Curing Time :	7 Days
Pot Life : ASTM C881	Approx. 50-60minutes.@23°C
Over Coating Time :	2-6 hrs @23°C
Tensile Modulus of Elasticity: ASTM D638	2,700 MPa
Viscosity:	2500 CPs @23°C

**Properties are typical under laboratory conditions and do not constitute a specification.

SUBSTRATE PREPARATION

Ensure that the concrete surface is clean and sound. Remove all contaminates including coatings, grease, oil, dirt, excessive laitance, salts and unsound material by grinding, hammering, etc. Where necessary degrease with chemical degreaser.
Any structural cracks should be injected with **Condur SC** or **Contite PUE300/301** resin injection material.

Note:- *Unsound deteriorated concrete that occurred as a result of corrosion of rebars, needs to be removed to behind rebar. Corroded rebar to be cleaned with rust remover. Apply* ***Congard Zinc*** *or* ***Congard ST*** *on cleaned rebar as a corrosion protective coating. Apply* ***Condur EA2*** *as a bonding bridge on the prepared concrete surface. Apply* ***Conpatch 600 Series*** *over* ***Condur EA2*** *bonding bridge to bring back the profile of concrete.*
In the case of porous substrate, finish the surface defects such as pinholes with **Condur FC.**

PRIMING

Mix part A and part B of **Condur CF (HP) Impregnation** and apply at 0.2 litre/m^2 (or) 0.22 kg/m^2 by roller or brush. The pot life is typically 50-60 minutes primer will dry within 2-6 hrs.
Note: *if substrate moisture is >4%, use* ***Floorgard Moisture Barrier*** *as primer. Refer to TDS for More information.*

MIXING

Part A : Part B = 2 : 1 by weight
Mix Part A and B of **Condur CF (HP) Impregnation** together for at least 3 minutes with a slow speed mixer (max.300 rpm). Avoid aeration while mixing. Mix only the amount that can be used within the pot life. **Condur CF (HP) Impregnation** should be applied only after 12 hrs minimum curing of **Condur CF (HP) Impregnation** used as primer.

APPLICATION

- Apply the first layer **Condur CF(HP) Impregnation** to the concrete substrate with a roller or brush at the coverage rate of approx.0.65 kg/m^2
- Apply the precut **Condur CF(HP) Fabric** firmly over the **Condur CF(HP) Impregnation** and remove entrapped air by rolling the surface of **Condur CF(HP) Fabric** 2-3 times in the direction in which it is being placed. This ensures proper impregnation of the **Condur CF(HP) Impregnation** into the **Condur CF(HP) fabric**.
- After 2 -6 hrs @23°C, roller apply a second layer of **Condur CF(HP) Impregnation** at the coverage rate of approx.0.25 kg/m^2 to completely seal the surface of **Condur CF(HP) Fabric**.
  Note : *Rough substrates consume more material. In the case of additional layers of* ***Condur CF(HP) Fabric****, the previous applied layer of* ***Condur CF(HP) Fabric*** *&* ***Impregnation*** *should be cured for at least 24 hrs prior to the second layer application.*
- Full cure of the epoxy resin takes 7 days at 23°C at lower temperatures full cure will require longer time.
- Finish with a coating if required such as **Elastoclad** (UV resistant 100% acrylic elastomeric anti carbonation coating).
  Note : Condur CF(HP) system *should only be applied by specialist applicators who have had training in the installation of this system. Cormix International can provide such training & a list of approved applicators.*

LIMITATIONS

Samples: - Witness samples should be made at site and tested in a laboratory to ensure the material meets the responsible designers requirement.
Substrate & Ambient Temperature should be between 8°C and 36°C.The substrate temperature should be at least 3°C above the dew point.
The product should only be used by experienced professionals. In hot or cold conditions precondition the product 24 hours before use.
Protect from rain for 24 hours after application.
Consult a structural engineer for load calculations & design.
A qualified structural engineer must be responsible for designing the works. Care must be taken in selecting suitably experienced and trained contractors
Protect from permanent exposure to direct sunlight moisture & or water.

Condur ® CF (HP) Impregnation

A TWO PART SOLVENT FREE HIGH PERFORMANCE EPOXY IMPREGNATION SYSTEM

CONSUMPTION RATE

Approximately 0.65 kg/m^2 for 1st layer.
Approximately 0.25 kg/m^2 for 2nd layer.

PACKAGING

15 kgs set
Other pack sizes available as per request.

STORAGE & SHELF LIFE

Condur CF(HP) Impregnation has a shelf life of 12 months from date of production stored properly in original unopened containers in dry conditions at temperatures between +5ºC to 35ºC. Protect from sunlight.

HEALTH & SAFETY

Please consult the latest Safety Data Sheet available on request.

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

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CORMIX
One step ahead

(5)

Joint Sealants, Joint Fillers

Conflex ® Band

HIGH PERFORMANCE WATERPROOFING JOINT SEALING SYSTEM

DESCRIPTION

The **Conflex Band** joint sealing system consists of two components;

Conflex Band flexible polyolefin : a strip available in 1 mm and 2 mm thicknesses and a range of standard widths including 100 mm, 150 mm and 200 mm.

Conflex Band Adhesive: a moisture tolerant, non-sag, two part epoxy adhesive specifically formulated to give optimum adhesion to the **Conflex Band** and construction materials. **Conflex Band Tape** is supplied in rolls 20 m in length. When the length of joint exceeds the roll length, the **Conflex Band** strip is joined by heat welding with a hot air gun. **Conflex Band Tape** is bonded to the structure on both sides of the joint using **Conflex Band Adhesive**.

USES & ADVANTAGES

Conflex Band is a waterproofing tape membrane which is designed to be bonded over movement joints or cracks in a structure to prevent the ingress of water and chemicals. It is bonded in position with **Conflex Band Adhesive**, a two part epoxy adhesive specifically formulated for the purpose.

Conflex Band may be used to seal joints in car park decks, podiums, balconies, walkways and other elevated structures, where the **Conflex Band** can be protected from mechanical damage by a cover plate. It is also used for sealing joints in basements, subways, tunnels, refineries and sub-structures in general. **Conflex Band** is also used on silos, roofs as well as water immersed applications such as tanks, sewers, reservoirs, pipelines and swimming pools where the joint movement may exceed the capability of conventional gun applied elastomeric sealants.

Advantages include:-

- Forms a tough, flexible joint flashing.
- Accommodates continuous, and pronounced cyclic movement.
- Range of sizes available to suit most applications.
- Excellent resistance to UV and weathering.
- Application to dry and damp surfaces.
- Excellent adhesion to most construction materials.
- Performance not affected by climatic extremes.
- Rot resistant.
- **Conflex Band** can be heat welded for the continuity of long joint lengths.
- Perforations along the edges of the **Conflex Band** provide a mechanical fixing element in addition to the excellent chemical bond offered by the **Conflex Band**
- Root penetration resistance.
- UV resistant.
- Can be applied over joints containing joint sealants.
- Resistant to a wide range of chemicals and salt water.
- Non toxic. Suitable for use with potable water.

PROPERTIES

The data quoted below is typical for the product but does not constitute a specification

Conflex Band Tape	1 mm	2 mm
Colour :	White or concrete grey	
Service temperature :	minus 10ºC to plus 80ºC	
Tear resistance – lengthwise : DIN EN 12311-2 Method B	≥ 12.5 N/mm²	≥ 8 N/mm²
Tear resistance – across : DIN EN 12311-2 Method B	≥ 12.5 N/mm²	≥ 8 N/mm²
Elongation at break – lengthwise : DIN EN 12311-2 Method B	≥ 500 %	≥ 500 %
Elongation at break – across : DIN EN 12311-2 Method B	≥ 500 %	≥ 500 %
Tear resistance (nail shank)-lengthwise : DIN EN 12310-1	≥ 200 N	≥ 400 N
Tear resistance (nail shank)-across : DIN EN 12310-1	≥ 200 N	≥ 400 N
Water vapour permeability : DIN EN 1931 Method B	≥ 40 m	≥ 80 m
Shore A hardness :	approx. 87	approx. 87
Bonding strength : DIN EN 1348	≥ 4.0 N / mm²	≥ 4.0 N / mm²
Peel test on wood carrier :	≥ 100 N	≥ 100 N
Water tightness : DIN EN 1928-A- 60 kPa/24 Std.	watertight	watertight
Water tightness : DIN EN 1928-A- 400 kPa/72 Std.	watertight	watertight
Burst pressure :	> 4.0 bar	> 5.0 bar
UV-Resistance : DIN EN ISO 4892-3	≥ 6500 h	≥ 6500 h
Reaction to fire : DIN ISO 11925-2 EN 13501-1	Class E	Class E
Chemical Resistance :	To Hydrochloric acid, Sulphuric acid, Citric acid, Lactic acid, Potassium hydroxide, Sodium hypochlorite, salt water, waste water & bitumen emulsions.	

Conflex Band Adhesive	
Colour :	Concrete grey
Specific gravity :	Approx. 1.7 (mixed)
Application temperature :	5ºC to 50ºC
Pot life :	60 min @ 25ºC, 1.5 litre pack
Initial cure :	24 hours
Full cure :	7 days
Adhesive bond strength :	exceeds tensile strength of concrete

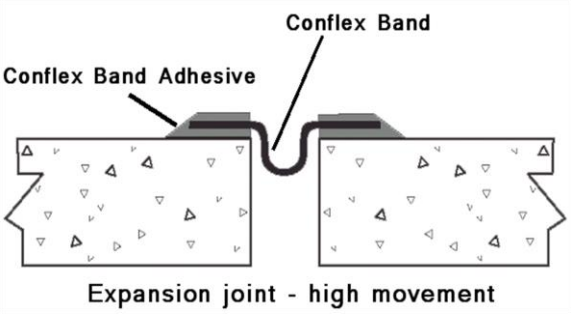
Movement accommodation :

Conflex Band used in conjunction with **Conflex Band Adhesive** can accommodate continuous cyclic movements which result in the debonded area being extended up to 100 % of the debonded width e.g. application with 50 mm. unbonded area can accommodate 50mm. movement.

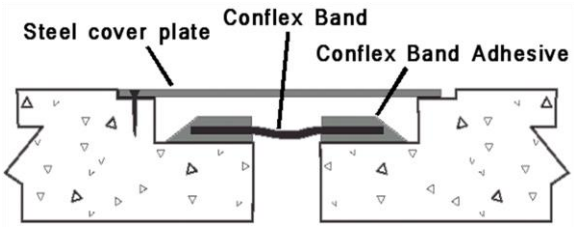
Conflex® Band

HIGH PERFORMANCE WATERPROOFING JOINT SEALING SYSTEM

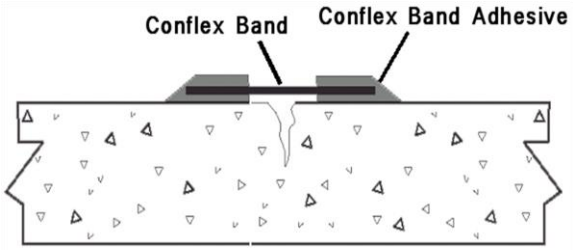
TYPICAL APPLICATIONS



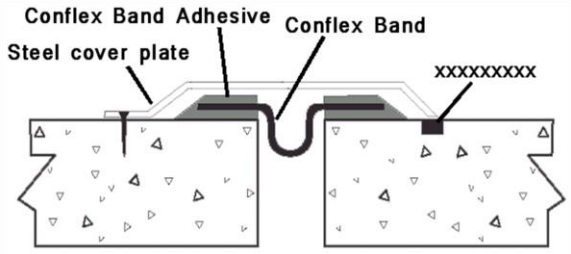
Expansion joint - high movement



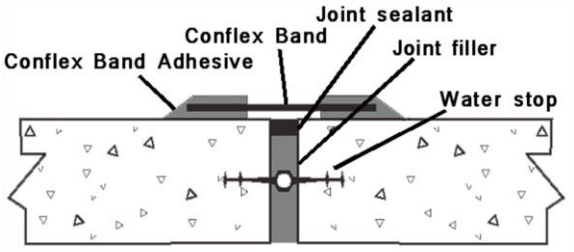
Recessed joint with cover plate



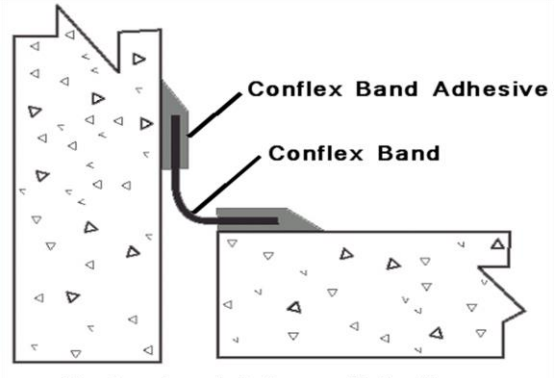
Crack repair - low movement



Car park with cover plate - high movement



Water retaining structure



Perimeter joint - wall to floor

MAINTENANCE

There are no special requirements, however, any damage should be repaired by exposing the damaged area, cleaning the surface and replacing the strip.

SPECIFICATION CLAUSES

Where indicated on the drawings joints shall be sealed with a flexible Thermoplastic Tape Elastomer membrane having a tensile strength greater than 5.5 MPa and an elongation greater than 1000% according to DIN EN ISO527-3. Such a bandage membrane is **Conflex Band** supplied by Cormix International. **Conflex Band** shall be installed strictly in accordance with the manufactures printed instructions.

APPLICATION INSTRUCTIONS

Width selection

Conflex Band width selection is based on the width of the joint plus the width of the required bond area either side of the joint. In the case of narrow joints and cracks the minimum width of the unbonded area must be 20 mm.

Where the quality of the concrete on either side of the joint is poor and porous, wider **Conflex Band tape** profiles should be used to ensure a leak free joint. In the case of a 20 mm wide joint with good quality concrete either side, a 100 mm wide **Conflex Band tape** can be used. On good quality, sound concrete, the bond area on each side of the joint should not be less 30-40 mm.

The 200 mm width should be used where the condition of the concrete is such that porosity adjacent or close to the joint edges is suspect, where the joint is excessively wide or misaligned and when the **Conflex Band** is to be permanently immersed.

Joint preparation

Expansion joints must be packed with a firm, consolidated joint filler, such as **Conflex Cell**, prior to laying the **Conflex Band** system. If necessary joints may be presealed using an elastomeric sealant prior to laying the **Conflex Band** system. Ensure that any sealant used is capable of accommodating the anticipated joint movement. Where **Conflex Band** is to be turned up parapets and the like, a splay should be provided either cast insitu or formed with **Conflex Band Adhesive** so that the change in direction is smooth and progressive.

Conflex® Band

HIGH PERFORMANCE WATERPROOFING JOINT SEALING SYSTEM

Surface preparation

Concrete surfaces onto which the **Conflex Band** is to be laid must be sound and dust free, with no frost or free surface water. New concrete must be fully cured and free from curing compound. The concrete surface ideally should be wood float finished for the width of the **Conflex Band** and free from irregularities, with well-defined arises and no vertical misalignment between each side of the joint. Prepare a suitable width of substrate slightly wider than the membrane width selected. Sharp arrises should be ground down pencil round.

Remove all dirt, dust and laitance by rigorous wire brushing, grit blasting or grinding. Any spalling or honeycombing must be repaired using **Conflex Band Adhesive** resin mortar and allowed 24 hours to cure prior to the application of the **Conflex Band** system. If the concrete is wetter than SSD, dry it gently with a gas torch or hot air blower.

If required, a maximum 25 mm width of bond breaker tape applied adjacent to either arrises will provide an increased debonded width and greater movement potential if required.

Priming of concrete

For most applications the use of a primer is unnecessary, however, in cases where **Conflex Band** is being used in immersed conditions or in critical situations such as friable substrate or maximum movement, the concrete must be primed with **Floorgard Primer 903**. Mix the **Floorgard Primer 903** and apply by brush, working well in, to a width of 25 mm either side of the **Conflex Band** membrane. **Floorgard Primer 903** should be left for about 40-60 minutes (depending upon temperatures) to allow evaporation of the primer solvent prior to the application of the **Conflex Band Adhesive**. If the primer has been left longer than 8 hours or has become contaminated with dust, the surface must be reprimed. The rate of cure of **Floorgard Primer 903** is temperature dependent. Ideally the substrate should be above 10ºC to ensure a reasonable cure rate, however, this primer can be applied when substrate temperatures are 5ºC and rising. Gentle warming of the concrete will assist in the application of the primer.

Priming of metal surfaces

Prior to the application of **Conflex Band** to metal surfaces, all surface contamination, rust and dirt must be removed. Wipe out all the rust using a cloth soaked with **Cormix Cleaner**, before application of the **Conflex Band Adhesive**.

Welding

Conflex Band can be joined by hot air welding to cater for any joint length. An electric hot air gun of the type used by vinyl flooring applicators is generally suitable for the task.

The hot air gun should have a nozzle with a slot shaped outlet to spread the hot air across a broad fan.

This will allow for more effective bonding and prevent localised overheating and charring of the **Conflex Band Tape.** Before bonding, create an overlap of at least 40 mm.

The ambient air temperature should be taken into account when welding by adjusting the welding speed to ensure that the tape is neither scorched nor under heated with no weld forming.

Preparation of the membrane

This operation is vital to the adhesion and performance of the **Conflex Band** system.

When all substrate preparation has been carried out and the joints are ready for application of the **Conflex Band**, measure and cut the length of **Conflex Band** to suit the joint.

Carry out any welding of the **Conflex Band Tapes** as required to cater for the length of joint to be bonded during this application session.

Lay the **Conflex Band** with the bond face up on a clean surface. Clean the face of the **Conflex Band** with a dry or wet clothe.

Mixing and application of the adhesive

Conflex Band Adhesive is a two part epoxy resin based adhesive designed for maximum bond strength with the **Conflex Band Tape** and is tolerant of damp concrete substrates. Transfer the entire contents of the hardener component into the base component can and mix thoroughly using a slow speed drill and paddle stirrer for a full 4 minutes stopping occasionally to scrape the sides of the tub. Mixing is complete when a uniform colour is achieved. Prior to applying the adhesive in the case of expansion joints or cracks install a backer rod inside the joint and apply masking tape on top at least the width of the joint to ensure this area remains unbonded. In addition put masking tape at each side of the joint at least, half the width of **Conflex Band Tape** + 1 cm**.** Apply the adhesive onto the substrate using a spreader, making sure that an even spread of adhesive approximately 2 mm thick is applied to an area wider that the **Conflex Band Tape**. Once this has been done lay the bond face of the **Conflex Band Tape** onto the adhesive and align as required pressing it firmly over its full area ensuring complete contact. Finish along each edge of the **Conflex Band Tape** with a small triangular fillet of adhesive and remove any excess.

The membrane should be applied no more than 20 minutes after cleaning the bond face of the **Conflex Band Tape**. If the **Conflex Band Tape** cannot be placed in contact with the adhesive within 20 minutes of cleaning, it should be cleaned again prior to placement. Allow the **Conflex Band Adhesive** to cure for 2 hours before applying a layer of **Conflex Band Adhesive** along the edges of the top surface of the tape. Application of the adhesive serves to encapsulate the edges as shown in the diagrams on page 2. Immediately after application of the adhesive to the top face of the tape, remove the masking tape.

Conflex ® Band

HIGH PERFORMANCE WATERPROOFING JOINT SEALING SYSTEM

LIMITATIONS

Joint layouts incorporating **Conflex Band** should be kept as simple as possible to allow for site joints to be restricted to straight butt joints. Avoid complex changes of angle or skew giving rise to difficulty in jointing and installation.

TAPE SECTION

Tape Section Negative Pressure

Movement	Joint Width 1-50 mm	50-75 mm	75-100 mm	Overlapping
Conflex Band 1 mm only for low water pressure <1.5 bar				
0 mm	150 mm	/	/	Chemical bonding Hot welding**
Up to 20 mm	200 mm	/	/	Hot welding**
Up to 50 mm	/	/	/	
Up to 75 mm	/	/	/	
Conflex Band 2 mm only for low and high water pressure				
0 mm	150 mm	250 mm	300 mm	Chemical bonding Hot welding**
Up to 20 mm	200 mm	250 mm	300 mm	Hot welding**
Up to 50 mm	/	300 mm	350 mm	Hot welding**
Up to 75 mm	/	/	400 mm	Hot welding**

**only if welding done perfectly
If expected movement > 20 mm it is suggested to install an omega curve.

Tape Section Positive Pressure

Movement	Joint Width 1-50 mm	50-75 mm	75-100 mm	Overlapping
Conflex Band 1 mm only for low water pressure <1.5 bar				
0 mm	150 mm	200 mm	200 mm	Chemical bonding Hot welding**
Up to 20 mm	150 mm	200 mm	200 mm	Hot welding**
Up to 50 mm	/	/	300 mm	Hot welding**
Up to 75 mm	/	/	/	/
Conflex Band 2 mm only for low and high water pressure				
0 mm	150 mm	200 mm	200 mm	Chemical bonding Hot welding**
Up to 20 mm	150 mm	200 mm	250 mm	Hot welding**
Up to 50 mm	/	250 mm	330 mm	Hot welding**

ESTIMATING

Supply

Conflex Band : 1 mm thick, 20 m roll length perforated
Widths : 100 mm, 200 mm, custom widths to order.

Conflex Band : 2 mm thick, 20 m roll length perforated
Widths : 100 mm, 200 mm, custom widths to order.

Conflex Band Adhesive :
1.5 kg (Part A : 1 kg and Part B : 0.5 kg) and 6 kg pack (Part A : 4 kg and Part B : 2 kg)

COVERAGE RATE

Conflex Band Adhesive :
Approx. 3.4 kg/m^2 at 2 mm thick (approx. 0.5 kg/ linear metre 35 mm bonded width with encapsulation)
Floorgard Primer 903 : 5 m^2 /litre

Notes : *the coverage figures for liquid products are theoretical - due to wastage factors and the variety and nature of possible substrates, practical coverage figures may be reduced.*

STORAGE & SHELF LIFE

All components of the **Conflex Band** system must be stored in a cool dry location at a temperature between 5ºC and 30ºC.

HEALTH & SAFETY

Conflex Band : there are no known hazards associated with this product in normal use.
Conflex Band Adhesive : Prolonged use and repeated skin contact may cause dermatitis in persons sensitive to epoxy resins and hardeners.
Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor. If swallowed, do NOT induce vomiting - give a glass of water. If in eyes, hold eyes open and flood with water for at least 15 minutes.
If skin contact occurs, remove contaminated clothing and wash skin thoroughly.
Material Safety Data Sheets are available to users of Cormix Products on request from their nearest Cormix branch. Read the MSDS, data sheet and product labels carefully before first use of any product.

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.

Conflex ® Band

HIGH PERFORMANCE WATERPROOFING JOINT SEALING SYSTEM

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

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Conflex® BS

HOT-APPLIED ELASTOMERIC CONCRETE JOINT SEALANT

DESCRIPTION

Conflex BS is a hot poured sealant comprising of synthetic rubber, bitumen, resins and chemical additives. The material is to be used in horizontal joints.

USES & ADVANTAGES

Conflex BS is heated into a liquid which will create an effective bond to the concrete preventing the passage of water through the joint. It is used in horizontal applications for concrete roads, bridges, dams, irrigation canals, reservoirs, etc.

Advantages include:-

- Easy to melt.
- Highly elastic.
- Good adhesion to asphalt and concrete surfaces.

PROPERTIES

Density @25ºC (ISO 2811-1)	: 800-1000 kg/m^3
Saybolt furol viscosity @25ºC (ASTM D88)	: 30-50 sec.
Safe temperature (TIS 479-2541)	: <180ºC
Pouring point (TIS 479-2541)	: <170ºC
Cone Penetration @25ºC (TIS 479-2541)	: 90 Max
Flow @60ºC (TIS 479-2541)	: <5 mm
Adhesion with mortar block @0ºC (TIS 479-2541)	: No crack or separation or groove deeper than 6.4 mm.

APPLICATION

1. Clean the joints & ensure they are dry, free of dirt, debris, dust curing compounds & mould oil. **Conflex BS** primer may be used to ensure good adhesion (allow to cure for 1-2 hours).
2. Heat **Conflex BS** to 175ºC in a suitable oil jacketed heater vessel.
3. Control the temperature of the heat transfer oil at less than 240ºC and the sealant less than 180ºC.
4. Stir the sealant until it is homogeneous and thoroughly melted.
5. Pour melted sealant into prepared joints use all material within 2-3 hrs.
6. Allow the poured sealant to dry and cure for 4-5 hours before opening to traffic.

Note :

- *The maximum safe heating temperature should not exceed 210ºC.*
- *Use an oil jacketed bitumen heater with temperature controller.*

APPLICATION RATE

Joint depth (mm)	Joint Width (mm.)								
	6	10	12	15	20	25	30	40
6	27.7	16.6	13.8	11.1	8.3	6.6		
8		12.5	10.4	8.3	6.2	5	4.1	
10		10	8.3	6.6	5	4	3.3	2.5
12			6.9	5.5	4.1	3.3	2.7	2.1
15				4.4	3.3	2.6	2.2	1.6
20					2.5	2	1.6	1.2

CLEANING

Use kerosene or mineral turpentine to clean up equipment.

PACKAGING

15 kgs box.

STORAGE & SHELF LIFE

The shelf life is a maximum of 12 months if kept in original packaging undercover protected from direct sunlight and rain.

HEALTH & SAFETY

- Wear suitable protective clothing including eye & face protection.
- In case of fire use dry chemical or carbon dioxide or sand. DO NOT use water.
- If molten material comes into contact with the skin, immerse the injured part under running cold water, and obtain medical advice immediately.
- Do not allow water to come into contact with molten material. This may cause it to boil over.
- If contact is made with the eyes immediately cool with cold water & seek medical advice.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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ISO 14001 : 2015 verified by Lloyd's Register International.

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Conflex ® PS

2 COMPONENT, GUN & POURING GRADE, POLYSULPHIDE SEALANT

DESCRIPTION

A two part polysulphide which cures to form a resilient elastic seal. Exhibits excellent adhesion to most surfaces.

USES & ADVANTAGES

Typical applications include sealing movement joints in buildings and civil engineering structures, including floors in factories, hardstands, taxiways, basements, subways, reservoirs, bridge decks, water treatment structures, sea walls, ports and industrial complexes.

Advantages include:-

- Cures to produce a tough sealant.
- Excellent adhesion to substrates.
- Overpaintable by most paint.
- Meets requirements of most international standards.
- Good ageing resistance.
- Can be used in immersed conditions.
- Permanently flexible.
- Can use in potable water.
- Non staining.
- Formaldehyde free.

PROPERTIES

Base Polymer:	Polysulphide
Colour:	Grey (other colours available on request)
Specific Gravity:	1.60 ± 0.05
Shore 'A' Hardness:	25
Shrinkage:	Negligible
Tensile Strength, (Psi):	> 50
Elongation:	> 300%
Application Temperature:	+5ºC to 50ºC
Pot Life:	Min 2 hrs. at 20ºC
Service Temperature:	-20ºC to +90ºC
Cure Time:	7 days at 20ºC
Water Resistance:	Excellent
Chemical Resistance:	Excellent
Flammability:	Cured sealant does not readily ignite.
U.V. Resistance:	Good
Movement Accommodation Factor:	(Butt) 25%, (Lap) 50%

Standards: Complies to the following standards :
British standard 4254 : 1993 -ISO 11600.1993
British standard 5212 : 1990
BS 6920-1988
US Federal specification TT-S-00227E, TT00230-C, November 1969 (amended 1970)
ASTM C920 : Type M Grade NS. Class 25 Grade P & NS
DIN 18540

Chemical Resistance to Occasional Spillage:

Petrol	Resistant
Diesel fuel	Resistant
Aviation fuel	Resistant
Skydrol	Resistant
White Spirit	Resistant
Kerosene	Resistant
Dilute Acids	Resistant
Dilute Alkalis	Resistant
Aromatic Solvents	Resistant
Hydraulic Fluid	Resistant
Solvents Hydrocarbon	Resistant
Dilute Oxidising Acids Not	Resistant

For other chemicals consult Cormix International Technical Service Department

SURFACE PREPARATION

All surfaces should be sound, clean and dry, free from dust, oil, grease or other contamination. Loose matter should be removed by abrasion if necessary finally removing the dust with a dry brush. Masking tape may be used to ensure a neat edge to the seal and protect substrates from which the removal of sealant is difficult. It should be applied before priming and be removed after tooling and before the sealant starts to cure.
A suitable back-up material (approx. 30% oversize) should be placed into the joint to the required depth. Closed cell polyethylene foam, **Conflex Cell**, is normally used as it also acts as a bond breaker, ensuring that the sealant bonds only to the sides of the joint.
If a rectangular section is used ensure that it does not twist, thus changing the configuration of the joint.

PRIMING

All joint substrates must be clean and dry before priming. Prime with **Conflex PS Primer**. For unusual substrates consult Cormix International Technical Service Department.

APPLICATION

The entire contents of the packaging containing Part 'B' should be added to Part 'A', and mixed using an electric drill with a stirrer at a maximum speed of 400 rpm. , until fully dispersed, taking care to prevent unmixed material remaining on the sides or bottom of the container. Ensure that all substrates and primers are dry prior to the application of sealant. The gun or cartridges are loaded by laying the pressure plate on top of the mixed sealant, placing the open end of the barrel (or cartridge) over the hole in the plate and applying a steady downward pressure.
The sealant is then applied using a closed barrel gun or with cartridges in a skeleton gun. Maintain an even pressure on the trigger and move the nozzle of the gun along the joint at an even pace. Select a tool to suit the width of the joint and wet it with clean water containing a little detergent. Working upwards in the case of vertical joints, lightly tool the sealant into the joint. This will improve adhesion, reduce air content and enhance the appearance of the finished joint.

Conflex® PS

2 COMPONENT, GUN & POURING GRADE, POLYSULPHIDE SEALANT

JOINT DESIGN

Laboratory tests show that in butt joints an optimum performance is achieved when

Width : Depth = 2 : 1 Wider joints may require more applications, allowing the sealant to cure slightly between applications.

If the joint is not deep enough to accommodate the foam backing strip, a self-adhesive polyethylene tape should be used to ensure that the sealant bonds only to the sides of the joint.

When used as a triangular fillet there should be at least 6 mm. cover on each substrate and the fillet should be a regular triangle in cross-section.

Joint widths may vary from a minimum of 5 mm to 50 mm wide.

Minimum sealant depth recommended:

- 5 mm for metals, glass and other impervious surfaces.
- 10 mm for all porous surfaces.
- 20 mm for joints exposed to traffic and hydrostatic pressures.
- 5 mm below flush for joints exposed to traffic.

The use of surface primer is recommended on porous surfaces. On non- porous surfaces a primer is not normally required except where glass or glazed surfaces are to be permanently immersed in water

COVERAGE

The number of sets required can be determined by using the formula:

$$\frac{\text{Cross - section of seal } (mm_2) \times \text{Length } (m)}{\text{set size}} = \text{No. of sets}$$

(Note that no allowance has been made for wastage.)

CLEANING

Remove excess material with a clothe and then clean with solvent.

PACKAGING

Conflex PS : 2.5 or 4 litre packs in metal cans.

The base is packed in a can and curing agent in the lid of the same package.

Conflex PS Primer : 2 litre tins.

STOREAGE & SHELF LIFE

Conflex PS should be kept dry between +5°C and 25°C.

The shelf life is 12 months if kept at 25°C.

HEALTH & SAFETY

During use avoid inhalation of dust & contact with skin & eyes. Wear protective clothing. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately **- DO NOT** induce vomiting.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Conflex ® PS(M)

A TWO PART POURING GRADE FAST SETTING POLYMER SEALANT

DESCRIPTION

A two part pouring grade fast setting polymer sealant that cures to form a tough resilient sealant. It complies with BS5212:1990 Types N, F and FB.

USES & ADVANTAGES

An easy to use flexible, durable, fast setting and puncture resistant sealant. Typical applications include sealing movement joints in factory floors, taxiways, basements, bridge decks, sea walls, wharfes, ports and industrial complexes.

Advantages include:-

- Excellent adhesion.
- Fast setting.
- Trafficable in 5 hrs @25ºC.
- Resistant most chemicals and fuel oils.
- Self levelling.
- No VOCS.
- Cures to a tough sealant.
- Tropical grade.
- Suitable for use in high humidities and temperatures.
- Good puncture resistance.
- Non staining.
- Good ageing.

PROPERTIES (POURABLE GRADE)

Specific Gravity @25ºC :	1.10-1.15 kg/litre
Touch dry time @25ºC :	Approx. 60 min.
Rheological Properties :	Self-Leveling.
(Immediately after mixing)	
Tensile Strength :	> 5 MPa.
ASTM D412	
Elongation at Break :	> 50 %
ASTM D412	
Shore A Hardness @25ºC :	
ASTM D2240	
3 hrs	≥ 4
4 hrs	≥ 15
5 hrs	≥ 25
14 days	≥ 80
Trafficable at 25ºC :	Approx. 5 hours.
Full Cure Time at 25ºC :	7 Days
Application Temperature :	+5ºC to 50ºC
Pot Life :	Approx 20-30 min. at 25ºC
Water Resistance :	Excellent
UV Resistance :	Good
Movement Accommodation Factor:	(Butt) 25%, (Lap) 50%

Chemical Resistance to Occasional Spillage:

Petrol	Resistant
Diesel fuel	Resistant
Aviation fuel	Resistant
Skydrol	Resistant
White Spirit	Resistant
Kerosene	Resistant
Dilute Acids	Resistant
Dilute Alkalis	Resistant
Aromatic Solvents	Resistant
Hydraulic Fluid	Resistant
Solvents Hydrocarbon	Resistant
Dilute Oxidising Acids Not	Resistant

For other chemicals consult Cormix International Technical Service Department

SURFACE PREPARATION

All surfaces should be sound, clean and dry, free from dust, oil, grease or other contamination. Loose matter should be removed by abrasion if necessary finally removing the dust with a dry brush. Masking tape may be used to ensure a neat edge to the seal and protect substrates from which the removal of sealant is difficult. It should be applied before priming and be removed after tooling and before the sealant starts to cure.

A suitable back-up material (approx. 30% oversize) should be placed into the joint to the required depth. Closed cell polyethylene foam, **Conflex Cell**, is normally used as it also acts as a bond breaker, ensuring that the sealant bonds only to the sides of the joint.

If a rectangular section is used ensure that it does not twist, thus changing the configuration of the joint.

PRIMING

All joint substrates must be clean and dry before priming. Prime with **Conflex PS Primer**. For unusual substrates consult Cormix International Technical Service Department.

MIXING & APPLICATION

Premix “Part A” & “Part B” for approx. 3 minutes using high speed drill mixer (or) paddle mixer having ribbon blades until a uniform homogenous mixture is achieved.

Immediately pour the homogenous mixture into the joint.

The poured material is self levelling and will initially touch dry within 60 minutes providing a smooth surface finish.

Allow the product to cure further for 5 hrs to open traffic.

JOINT DESIGN

Laboratory tests show that in butt joints an optimum performance is achieved when Width: Depth = 2 : 1

If the joint is not deep enough to accommodate the foam backing strip, a self-adhesive polyethylene tape should be used to ensure that the sealant bonds only to the sides of the joint.

Joint widths may vary from a minimum of 5 mm to 20 mm wide.

Minimum sealant depth recommended:

- 5 mm for metals, glass and other impervious surfaces.
- 10 mm for all porous surfaces.
- 20 mm for joints exposed to traffic and hydrostatic pressures.
- 5 mm below flush for joints exposed to traffic.

COVERAGE

The quantity required can be determined by using the formula:

$$\frac{\text{Cross - section of seal (mm}^2\text{) x Length (M)}}{1000\ \text{cc}} = \text{Qty (litres)}$$

(Note that no allowance has been made for wastage.)

Conflex ® PS(M)

A TWO PART POURING GRADE FAST SETTING POLYMER SEALANT

CLEAN UP

Use Xylene to clean equipment.

PACKAGING

8 kg set.
(Part A= 6 kg. Part B= 2 kg)
8 kg set = 7.11 litres.

2.2 kg set.
(Part A= 1.65 kg. Part B= 0.55 kg)
2.2 kg set = 2 litres.

STORAGE & SHELF LIFE

Do not allow to freeze. Store in a dry shaded area between 10-35 ºC in original unopened containers.
The shelf life is 12 months when stored correctly in the original unopened containers.

HEALTH & SAFETY

Wear protective clothing, goggles & gloves. If in contact with eyes wash out immediately with water & seek medical attention. Fatal if taken internally.

TECHNICAL SERVICE

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Conflex® Backer Rod

LIGHT & DURABLE CLOSED CELL POLYETHYLENE BACKER ROD FOR JOINT SEALANTS

DESCRIPTION

Conflex Backer Rod is a closed cell polyethylene foam supplied in circular cord lengths.

USES & ADVANTAGES

Conflex Backer Rod is used at the base of joint openings to provide the proper shape factor in a sealant.
It is also water repellent, highly weather proof and chemical resistant.

Uses:

- Expansion joints.
- Horizontal paving or traffic bearing joints.
- Joints between exterior facing panels.
- Isolation joints.
- Control joints in masonry walls.
- Pipes, ducts and vent openings.
- Precast roofs.

Advantages include:-

- Economical and easy to install.
- Excellent shock absorbing and heat insulating properties.
- Chemical resistant.
- Provides proper shape factor.
- Provides support for sealants in horizontal joints.
- Acts as a water barrier.

PROPERTIES

Appearance:	Light and durable grey backing rod
Density:	41-50 kg/m3
Thermal Conductivity:	0.027 w/mk at 10ºC mean temperature and not subject to aging over a period more than 5 years (ASTM C177)
Tensile Strength	
Longnitudinal Direction:	44.6 N/cm^2
Lateral Direction:	38.7 N/cm^2
Elongation	
Longnitudinal Direction:	84.3 %
Lateral Direction:	77.0 %
Shore A Hardeness: (ASTM D2240)	25
Tear Strength	
Longnitudinal Direction:	35.5 N/cm
Lateral Direction:	29.5 N/cm
Water absorption:	0%
Temperature Range:	-80 / +85ºC
Ozone Resistance:	No crack (ASTM D1149)
UV Resistance:	> 5 years (ASTM G53-88)
Chemical Resistance:	No change
Oil Resistance:	No change

APPLICATION

The diameter of the backer rod is recommended to be approximately 20 to 25% larger than the width of the joint.
It should be positioned so that the required minimum sealant depth can be obtained. The circular section of the backer rod provides a convex face giving a minimum strain shape for elastomeric sealants while reducing the stress at the bond interface.

PACKAGING

Size	Pack Size
Diameter 6 mm.	100 metres / box.
Diameter 8 mm.	100 metres / box.
Diameter 10 mm.	100 metres / box.
Diameter 13 mm.	100 metres / box.
Diameter 15 mm.	100 metres / box.
Diameter 20 mm.	100 metres / box.
Diameter 25 mm.	50 metres / box.
Diameter 30 mm.	50 metres / box.
Diameter 50 mm.	2 metres / box.

STORAGE & SHELF LIFE

Store in clean area & dry conditions.
DO NOT PUNCTURE.
Shelf Life is indefinite. In hot climate it is preferable not to leave exposed for long periods.

HEALTH & SAFETY

There are no health hazards associated with **Conflex Backer Rod** in normal use.

TECHNICAL SERVICE

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QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO14001: 2015 verified by Lloyd's Register International.

CONTACT DETAILS

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Rev.013 Sep 2021

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Conflex® Cell

NON ABSORBENT, CLOSED CELL POLYETHYLENE JOINT FILLER

DESCRIPTION

Conflex Cell is a non-absorbent, rot proof, closed cell polyethylene joint filler which is semi rigid and particularly suitable to from expansion joints in brick-work, blockwork and concrete.

USES & ADVANTAGES

Conflex Cell may be used as back up & bond breaker to support sealants and forming or filling expansion joints e.g. in bridge decks, parapets, abutments, subways, sewage treatment works, raw & potable water reservoirs, irrigation channels & culverts, brick & blockwork in building superstructures, water retaining structures, traffic joints in chemical plants, road joints, joints in chemical bunded areas.

Advantages include:-

- Bitumen free.
- C.F.C free.
- Rot proof.
- Non absorbent. Non tainting.
- Dose not expand where in contact with water.
- Does not damage joint sealant.
- Resilient.
- Excellent recovery after compression.
- Easily cut on site to size required.
- Low load transfer.
- Readily compressible.
- Excellent chemical resistance.
- Particularly recommended for storage of potable water.

PROPERTIES

Form:	Semi rigid closed cell heat laminated sheet. Grey colour.	
Density:	50 kgs/m^3	
Thermal Conductivity: (ASTM C177-97)	0.022 W/mK at 17.5ºC	
Water Absorption:	0%	
Flammability:	HF-2	
Compressive Strength:	1.7 N/CM^2	@10 %
	3.4 N/CM^2	@25 %
	8.9 N/CM^2	@50 %
Elongation		
First Direction:	94.70 %	
Second Direction:	107.10 %	
Tensile Strength		
First Direction:	36.7 N/CM^2	
Second Direction:	69.7 N/CM^2	
Tearing Strength:	35.6 N/CM^2	
UV Resistance:	Excellent with paint	
Chemical Resistance: (ASTM D1308)	No change	

APPLICATION

When installed in expansion joints between suspended slabs copper nails or adhesive may be used to hold in place. **Conflex Cell** is particularly suitable for expansion joints between bricks.

Joint sealing slots can be easily formed by cutting off a strip to the required depth. Put the strip back by fixing with 5 cm. nails at intervals. Install the filler flush with the finished surface. Before sealing the top strip can be easily removed leaving a clean, ready to fill slot. Bond breakers are not required with **Conflex Cell** as elastomeric sealants will not bond to it.

IMPORTANT NOTES

Unlike fibre boards **Conflex Cell** does not damage elastomeric sealants. In general bitumen impregnated fibre boards should not be used with elastomeric sealants as mobile fractions attack & damage the sealant. Use **Conflex Cell** in conjunction with **Conflex** elastomeric joint sealants. Bitumen fibre boards tend to absorb water & expand **Conflex Cell** does not absorb water

CONSUMPTION

Conflex Cell is supplied in sheets which can easily be cut to size with a knife or saw.

Sheet width: 0.6 m.

Sheet Thickness: 10, 15, 20, 25 mm.

Conflex Cell can be cut to order. Other thickness available.

STORAGE & SHELF LIFE

Store in clean area. In hot climates it is preferable not to leave exposed for long periods. Shelf life is indefinite.

HEALTH & SAFETY

There are no health hazards associated with **Conflex Cell** in normal use.

TECHNICAL SERVICE

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CORMIX
One step ahead

(6)

Concrete Accessories

CORMIX
One step ahead

(6.1)

Curing Compound
&
Mould Oils

Corcure ® 75

CONCRETE CURING MEMBRANE

DESCRIPTION

Corcure 75 is a metallic silicates based curing compound particularly suitable for surfaces that will receive subsequent treatments such as renders or paints.

USES & ADVANTAGES

Corcure 75 is used to produce a permanent sealing effect to concrete retaining moisture for effective curing. It hardens & seals the surface increasing the concretes resistance to chemicals & oils. It is used especially where the concretes surface will be subsequently coated or will receive a render.

Advantages include:-

- To prevent premature water loss from concrete.
- Does not interfere with adhesion of surface dressings when used correctly.
- Non staining.
- Provides long term curing and dust proofing.
- Shrinkage and associated cracks reduced.
- Assists in strength improvement and improves surface hardness.
- Labour saving.
- Improves hydration of cement.
- Seals concrete provides non-dusting concrete.
- Drys quickly with no odour.
- Does not interfere with the adhesion of most paints and toppings.

PROPERTIES

Appearance:	Clear liquid, blue, red or white available
Specific Gravity:	Approx. 1.12 kg/litre
Curing Efficiency: ASTM C156 & BS 7542	>75%

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

APPLICATION

Corcure 75 is ready to use and should not be diluted. It can be used where coatings or mortar renders will be applied. Apply as soon as possible after “free” water evaporates from horizontal surfaces or vertical forms are stripped.

Where conditions are particularly adverse **Corcure 75** may initially be used in conjunction with polythene sheet.

After the first hour the sheet can be transferred to the next section. The sheet must be kept tight to the concrete surface.

COVERAGE RATES

On vertical surfaces and horizontal surfaces 5.5 - 6.0 m^2 per litre.

PACKAGING

25 litre pails; 200 litre drums.

STORAGE & SHELF LIFE

Corcure 75 should be stored in its original unopened packaging in a cool area when stored for long periods. It should not be in direct sun light or be exposed to naked flame. Agitate drum before use.
The shelf life is 12 months in original sealed containers.

HEALTH & SAFETY

Avoid contact with skin and wear goggles and gloves when applying. In event of contact wash off with copious amounts of water. In case of contact with the eyes rinse immediately with plenty of clean water and seek medical attention.

TECHNICAL SERVICE

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DISCLAIMER

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Corcure ® 90

CONCRETE CURING MEMBRANE

DESCRIPTION

Corcure 90 is a ready to use water based curing compound used to prevent water evaporation from the concrete surface. Applied to fresh concrete surfaces **Corcure 90** forms a continuous film providing a barrier to premature water loss ensuring effective hydration of the cement and no shrinkage cracks.
Corcure 90 complies with AASHTO M148 Type 2, ASTM C 309 Type 1 Class A, ASTM C309 Type 2 Class A pigmented version, BS 7542, BS 8110 Part 1 Class 6.6.3 (C).

USES & ADVANTAGES

Corcure 90 is used to prevent premature water loss particularly on large exposed concrete surfaces e.g. highways, runways, aprons, precast concrete, decks, hardstands etc.

Advantages include:-

- Protects concrete surfaces against sun, wind and rain.
- Solvent free, no noxious fumes.
- Single coat and easy application.
- Reduces incidence of plastic or shrinkage cracking.
- Ensures required strengths reached.
- No need for other costly curing methods.
- Labour saving.

PROPERTIES

Appearance:	White liquid
Specific Gravity:	Approx. 1.02 kg/litre

APPLICATION

Corcure 90 is ready to use and should not be diluted.
Corcure 90 should generally be used where coatings or mortar renders will not be applied. Ideally it should be applied as soon as the form-work is removed or as soon as the free surface water has disappeared from the horizontal surfaces. Do not apply to concrete that still has bleed water on its surface. **Corcure 90** provides a visual guide when initially applied being a white liquid on drying it forms a clear membrane.
Corcure 90 can be applied by various spraying equipment i.e. knapsack or motorised sprayer.
Note: **Corcure 90** film should be removed prior to application of screeds or coatings.

COVERAGE RATES

Up to 5.5 m^2 per litre.

PACKAGING

200 litre steel drums, 1,000 litre bulks.

STORAGE & SHELF LIFE

Corcure 90 should be stored in its original unopened packaging in a cool area.
It should not be in direct sun light or be exposed to naked flame or frost.
The shelf life is 9 months in original sealed containers.

HEALTH & SAFETY

Corcure 90 is a water based emulsion of non- hazardous materials. Normal hygiene precautions should be taken when using **Corcure 90**. In case of eye or skin contact thoroughly irrigate with water. If irritation persists seek medical advice.

TECHNICAL SERVICE

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Constrip ® 2

WATER BASED CONCRETE FORM RELEASE AGENT

DESCRIPTION

Constrip 2 is a ready to use water based emulsion form release agent designed to provide a high quality finish to concrete surfaces. It is formulated from mineral oils and non hazardous chemicals to produce release properties superior to standard materials. The product forms a thin repellent skin on the moulds surface allowing for easy removal of the concrete.

USES & ADVANTAGES

Constrip 2 can be used for steel, wooden or plastic forms.

Advantages include:-

- Ready to use.
- Spray or roller applied.
- Produces high quality concrete surface.
- Quick easy release.
- Non hazardous or toxic.
- No pungent smell.

PROPERTIES

Appearance:	Milky white liquid
Specific Gravity:	0.99 ± 0.01kg/litre

PREPARATION OF USED MOULDS

Moulds must be free of all foreign matter prior to the application of **Constrip 2**. After use the mould should be immediately washed with clean water to remove any foreign matter. If after washing foreign matter still exits use of an industrial detergent and stiff brush followed by through rinsing with clean water if necessary.

APPLICATION

Constrip 2 is ready to use and should be applied by spray or roller in a thin, even film. If ponding on mould oil occurs it should be removed by sponge before mould is used.

COVERAGE RATES

35 - 40 m^2 per litre depending on type of form-work.

PACKAGING

200 litre drums or 1,000 litre bulks.

STORAGE & SHELF LIFE

Store in original unopened packaging and in conventional warehouse away from direct sunlight. The shelf life is 9 months in original sealed containers.

HEALTH & SAFETY

Constrip 2 is formulated from materials that present no serious hazard to health provided normal protection and hygiene is maintained.
Operators should wear protective clothing, gloves, and goggles. Good ventilation is important in confined spaces or when spray applying. Wash off skin with plenty of soap and water. If in contact with eyes rinse immediately with clean water & seek medical attention.

TECHNICAL SERVICE

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Constrip ® 4

HIGH PERFORMANCE MOULD OIL

DESCRIPTION

A premium mould oil specifically developed for harsh conditions in tropical climates where high performance is required. **Constrip 4** gives excellent resistance to tropical rain and performs well where steel moulds have high surface temperatures. A ready to use liquid which out performs standard mould oils.
Constrip 4 is an emulsified product based on a blend of selected high quality paraffin solids and oils.

USES & ADVANTAGES

Can be used with all types of moulds providing fast easy release and clean fair face concrete.

Advantages include:-

- Reduces or eliminates bubbles.
- Resistant to rain.
- Performs well with high surface temperatures.
- Ready to use.
- Produces clean fair face finish.
- High coverage rate.
- No staining to concrete surface.
- Spray or roller applied. Easy to clean.
- Non toxic.
- Does not rust moulds.
- Easy to release.
- Once applied long service life.
- Economical. Saves on bug hole and other surface repairs.

PROPERTIES

Appearance:	White liquid
Specific Gravity:	0.95 - 1.02 kg/litre

APPLICATION

Constrip 4 is ready to use and shall be applied as thinly and evenly as possible. Apply by spray, roller or sponge, excess material should be removed by sponge before pouring concrete.

COVERAGE RATES

25 - 40 m^2 per litre depending on type of form-work.

PACKAGING

200 litre drums or 1,000 litre bulks.

STORAGE & SHELF LIFE

Constip 4 should be stored protected from sunlight and frost. The shelf life is 9 months in original sealed containers.

HEALTH & SAFETY

Constrip 4 is formulated from materials that present no serious hazard to health provided normal protection and hygiene is maintained. Operators should wear protective clothing, gloves and goggles. Good ventilation is important in confined spaces or when spray applying.
Wash off skin with plenty of soap and water. If in contact with eyes rinse immediately with clean water & seek medical attention.

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CORMIX
One step ahead

(6.2)

Bonding Agent

The Construction Chemicals Specialist

Cormix ® Latex

POLYMER BONDING AID & WATERPROOFING ADMIXTURE

DESCRIPTION

Cormix Latex is an aqueous emulsion especially formulated for use with cementitious mixes. It is used in mortar and concrete to improve the waterproofing, wear resistance, durability and bonding properties. Mortars containing **Cormix Latex** may be used for vertical, horizontal and overhead repair work.

USES & ADVANTAGES

Cormix Latex is used to substantially improve the qualities of cement mixes, for example: thin layer patch mortars, renders, floor screeds, concrete repair mortar, abrasion resistant linings, fixing mortars, bonding slurry etc.

Advantages include:-

- Excellent water resistance.
- Increased durability.
- Plasticising effect and reduces shrinkage.
- Improved corrosion protection.
- Economical.
- Higher flexibility.
- Good resistance to many salts and chemicals.
- Excellent adhesion to concrete, mortar, stonework, plaster & blockboard.
- Thermal expansion and elastic modulus similar to concrete.
- Non toxic.
- Improves cohesion & workability.
- Single component easily gauged.
- Improved flexural & tensile properties allow for thin application.

PROPERTIES

The below results are approximated and achieved by considering the properties of a sand : cement mortar at 3:1 combined with **Cormix Latex** at 10 litres per 50 kg of cement.

Appearance: Milky White Liquid
Specific Gravity: Approx. 1.02 ± 0.02 kg/litre
Compressive Strength: 10-15% increase over control
BS 6319, Part 2
Tensile Strength: 5-10% increase over control
BS 6319, Part 7
Flexural Strength: 5-10% increase over control
BS 6319, Part 3
Shear Bond Strength: > 8.6 N/mm^2
by Slant Shear Method, ASTM C1042
Complies to ASTM C1059, Type II and ASTM C932
Chemical resistance:
Adding **Cormix Latex** to cement mortars reduces permeability and therefore helps reduce the rate of attack by aggressive chemicals, acid gases and water.
Toxicity: Non-toxic

SUBSTRATE PREPARATION

Saw cut or cut back the extremities of the repair locations to a depth of at least 10 mm. to avoid feather-edging and to provide a square edge. Break out the complete repair area to minimum depth of 6 mm. up to the sawn edge.

REBAR PRIMING

Prime rebar with **Congard Zinc** or **Congard ST**.

MATERIALS

Aggregates and sand should be clean and well graded. Sand particle size should relate to applied thickness of mortars and required surface finish.

SUBSTRATE PRIMING

The substrate should be thoroughly soaked with clean water and any excess removed prior to commencement.
A slurry primer should be prepared consisting of 1 volume **Cormix Latex** to 1 volume clean water to 1-3 volumes fresh cement. The slurry should be stirred frequently during use to offset settlement & worked well into the surface.
Avoid ponding. The repair mortar, topping or render must be applied on the wet slurry primer. If the slurry primer dries before application of the mortar, it must be removed and the area reprimed before continuing.

MIXING

Hand mixing is not recommended. Preferably a forced action mixer or low speed drill with appropriate paddle should be used. Hand mixing should only be undertaken with small quantities. Weigh the cement, sand and, where required, aggregate into the mixer and dry blend together for one minute. With the machine in operation, add the pre-mixed **Cormix Latex** and clean water. Continue mixing for 3 minutes to ensure complete dispersal into the sand and cement. Make any small adjustment to the quantity of clean water but do not significantly exceed the dosage shown below. Mix until lump free with creamy consistency.

METHOD OF USE

In all situations the surface must be in a clean, laitance free and roughened state. Absorbent surfaces should be saturated thoroughly with water, but avoid ponding. Oil or grease deposits should be cleaned away. Pull off tests should be conducted to assess decontamination. Expose rebar & clean to bright condition. Grit or sand blast.
Remove any corrosive agents such as chloride by high pressure water blasting.

Cormix ® Latex

POLYMER BONDING AID & WATERPROOFING ADMIXTURE

APPLICATION

Cormix Latex mortars, toppings and renders must be well-compacted on to the primed substrate by trowel. Exposed steel reinforcement should be completely encapsulated by the mortar. **Cormix Latex** mortars can be applied at a minimum thickness of 6 mm. and up to 40 mm. thickness, dependent on the location and configuration of the repair zone. Where thick sections up to a total thickness of 40 mm. are to be built up by hand or trowel application, the surface of the inter-mediate layers should be scratch-keyed. Application of the slurry primer and a further application **Cormix Latex** mortar may proceed as soon as this layer has set.

MIX DESIGN

Repair Mortar - Mix Design
Thickness : 6 mm. - 40 mm.

10 litres	of	**Cormix Latex**
8 litres	of	Clean water.
50 kgs.	of	Ordinary Portland Cement.
150 kgs.	of	Sand - fine to coarse depending on layer thickness.

Floor Screeds - Mix Design
Thickness : 10 mm. - 40 mm.

10 litres	of	Cormix Latex
6 litres	of	Clean water.
50 kgs.	of	Ordinary Portland Cement.
150 kgs.	of	sand - coarse sand up to 6 mm. depending on coat thickness.

The screed should be semi dry.

Renders - Mix Design
Thickness : 6 mm. - 9 mm.

10 litres	of	**Cormix Latex**
6 litres	of	clean water.
50 kgs.	of	Ordinary Portland Cement.
150 kgs.	of	Fine sand.

The render should be semi dry & cohesive.

Bonding Coat for Rendering / Bonding between old & new concrete

Cormix Latex : Water - 1 : 1
Dry mix : Cement : Fine sand - 1 : 1 or cement only.

Mix as mixing instruction above.
Apply slurry to prewetted substrate in 1 - 2 mm. thickness & place new concrete or water immediately before the slurry dries. **Place Wet on Wet.**
The above mixes are based on dry sand & aggregate. Site conditions & varying moisture contents will effect final performance.
Dry mix cement, sand and aggregate (if needed) for at least 1 minute before adding the premixed **Cormix Latex** & water. Mix for at least another 5 minutes. Do not use excessive amounts of water. Allowance must be made for the water content in the sand.

CURING

Cure with **Corcure 180** or **Corcure 90**.

SUBSEQUENT FINISHES

Cormix Latex can be finished with a steel, plastic or wood float, or by a damp sponge technique, to achieve the desired surface texture. The completed surface should not be overworked.

PACKAGING

25 litre pails; 200 litre drums.

STORAGE & SHELF LIFE

Cormix Latex should be stored protected from sunlight and frost. The shelf life is at least 9 months in original unopened containers.

HEALTH & SAFETY

Wear suitable protective clothing, gloves and eye protection. The use of barrier creams provide additional skin protection. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, **DO NOT** induce vomiting - give a glass of water. If in eyes, hold eyes open, flush with water for at least 15 minutes and see a doctor. If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and water.

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CORMIX
One step ahead

(6.3)

Surface Retarder & Bond Breakers

Constrip ® SRG

CONCRETE SURFACE RETARDER GEL

DESCRIPTION

Constrip SRG is a surface retarder gel used to expose aggregate on formed portland cement based surfaces.
Constrip SRG produces decorative and architectural finishes showing the colour and texture of natural aggregate.
Constrip SRG is designed for face down work or for application to vertical forms.

USES & ADVANTAGES

Constrip SRG is used to produce exposed aggregate finishes on face down & vertical applications.

Advantages include:-

- A uniform depth of retardation.
- Treated surfaces give excellent bond for construction joints, stop ends or renderings.
- Can retard the set of the cement paste up to 8 mm. depending on thickness of coating and concrete mix design.
- Economical and simple method of revealing concrete surfaces, no need for costly chipping or scabbling.
- Does not reduce concrete strengths.
- Uniform results.
- No additional form release agent is required.
- Use for precast panels, walls and vertical construction joints.

PROPERTIES

Appearance:	Brown type gel
Specific Gravity:	Approx. 1.07 kg/litre

SUBSTRATE PREPARATION

Ensure that all mould surfaces are dry clean and free from scale, oil, grease and concrete build up etc.

APPLICATION

Constrip SRG is ready to use from the container, it should be stirred before use, do not dilute. **Constrip SRG** may be applied to any type of clean form. Apply a heavy coat with a brush or serrated trowel. Allow to dry. (Normally 2 - 4 hours). For exposed aggregate forms should be removed as soon as possible after the concrete is poured.

A sample slab should be made to ensure that required effect is achieved.

COVERAGE RATES

Coverage rate 3-4 m^2 per kg. depending on form-work and designed retardation depth.

CLEANING

Some of the cement paste will stick to the form when the shuttering is stripped, this can be removed while still soft from both the form-work and concrete by a wire brush or high pressure water jet.

PACKAGING

Constrip SRG is supplied in 20 kg. containers.

STORAGE & SHELF LIFE

Constrip SRG should be stored in temperature range 2ºC - 50ºC. The shelf life is 12 months in original sealed containers.

HEALTH & SAFETY

Constrip SRG is classed as non hazardous. All chemical products should be used with care. Avoid contact with skin and eyes, wear protective gloves and eye protection.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

Cormix International Limited
89 Romklao Rd., Sansab, Minburi, Bangkok 10510
Tel. (66 2) 917 3955-8
http://www.cormix.com
E-mail: info@cormix.com

Rev.009 Jun 2021

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Constrip ® SRL

CONCRETE SURFACE RETARDER LIQUID

DESCRIPTION

Constrip SRL is a liquid surface retarder providing an easy method of obtaining a mechanical key for “Kicker” joints, renders and screeds on horizontal surfaces of freshly placed concrete.

USES & ADVANTAGES

Constrip SRL is used to achieve exposed aggregate surfaces.

Advantages include:-

- A uniform depth of retardation is achieved.
- Used for exposed aggregate finish on renders, screeds, paving, slabs and construction joints.
- Retards the setting time of the superficial cement coat next to the treated surface.
- Can retard the set of the cement paste up to 8 mm. depending on thickness of coating and concrete mix design.
- Economical and simple method for horizontal concrete surface exposed aggregate finishes.
- Treated surfaces give excellent bond for renders and concrete saving costly scabbling.
- Does not reduce concrete strengths.
- Uniform results

PROPERTIES

Appearance:	Clear liquid
Specific Gravity:	Approx. 1.07 kg/litre

SUBSTRATE PREPARATION

Ensure that all mould surfaces are dry clean and free from scale, oil, grease and concrete build up etc.

APPLICATION

Constrip SRL is a light brown water like liquid that is ready to use. It should not be diluted.

Constrip SRL should be sprayed to concrete surfaces immediately after finishing. The concrete should be proportioned to minimise segregation and bleeding. Once the concrete has set the treated surface should be wire brushed or water jet washed down to expose the aggregate.

COVERAGE RATES

The depth of exposure of the aggregate is dependent upon the cement content of the mix and w/c ratio. Coverage rate 4 - 5 m^2/litre.

PACKAGING

Constrip SRL is supplied in 25 litre containers.

STORAGE & SHELF LIFE

Constrip SRL should be stored in temperature range 2ºC - 50ºC. The shelf life is 12 months in original sealed containers.

HEALTH & SAFETY

Constrip SRL is classed as non hazardous. All chemical products should be used with care. Avoid contact with skin and eyes, wear protective gloves and eye protection.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

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Rev.010 Oct 2022

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Constrip ® Bond Breaker

BOND BREAKER

DESCRIPTION

Constrip Bond Breaker is a single component, ready to use bond breaker for releasing either steel to concrete or concrete to concrete works. It is supplied in two grades water based and solvent based, where water based is eco-friendly.

USES & ADVANTAGES

When applied to concrete or steel **Constrip Bond Breaker** produces a surface to which further concrete will not bond.

Uses include in match cast precast concrete, top down construction applied to lean base form concrete in for example underground structures, precast panel production and other applications where bond breaking required.

Advantages include:-

- Economical.
- High coverage rates.
- Solvent free, no toxic fumes for WB.
- Easy application.
- Non toxic for WB.
- Ready to use.
- Provides good debond.
- No fire hazard for WB.

PROPERTIES

	Water Based (WB)	Solvent Based (SB)
Form:	liquid	liquid
Colour:	Milky white	Clear to amber
Specific Gravity:	1.00±0.02	0.82±0.02
Drying Time:	< 1 hr	< 1 hr
Re-coat Time:	2-3 hrs	2-3 hrs

APPLICATION

Constrip Bond Breaker is ready to use and should not be diluted. Apply by brush or spray liberally to the concrete or steel and allow to dry before pouring next concrete. Drying time at 30°C is less than one hour.

In some applications such as match cast concrete effectiveness may be increased by the inclusion of talcum powder.

Notes : It is the applicants responsibility to ensure and achieve the uniform film formation and drying of film before pouring the concrete.

In case of rain during the drying of material, reapply the coat.

COVERAGE RATES

First coat 4.5 - 5.5 m^2 per litre depending on surface absorption, porosity & texture of the substrate.

2^{nd} coat 6.0 - 7.0 m^2 per litre.

CLEANING

Clean all equipment & tools with water for water based product & with thinner for solvent based products.

PACKAGING

Constrip Bond Breaker (WB) : 25 L & 200 L plastic container.

Constrip Bond Breaker (SB) : 20 L & 200 L steel container.

STORAGE CONDITIONS & SHELF LIFE

Constrip Bond Breaker should be stored in its original unopened packaging in a cool area. It should not be in direct sun light or be exposed to naked flame or frost. The shelf life is 6 months in original sealed containers.

HEALTH & SAFETY

Constrip Bond Breaker (WB) is a water based emulsion of non- hazardous waxes. Normal hygiene precautions should be taken when using **Constrip Bond Breaker (WB)**. In case of eye or skin contact thoroughly irrigate with water. If irritation persists seek medical advice. **Constrip Bond Breaker (SB)** is flammable.

Avoid skin and eye contact and breathing in vapour. Use away from all sources of heat and ignition - no smoking. Avoid accumulation of static electricity. Electrically link and ground metal containers for transfer of product. Use in a well ventilated area. Exhaust ventilation may be necessary to maintain component airborne concentrations below exposure standards. Keep containers tightly closed when not in use.

Ensure a high level of personal hygiene is maintained when using this product. Wear overalls, chemical goggles, impervious gloves, protective clothing and eye/face protection. If inhalation risk exists wear organic vapour respirator. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Always wash hands before eating, drinking, smoking or using the toilet.

Constrip ® Bond Breaker

BOND BREAKER

TECHNICAL SERVICE

The Cormix International Limited 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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

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(7)

Concrete & Shotcrete Admixtures

CORMIX
One step ahead

(7.1)

Concrete & Mortar Admixtures

The Construction Chemicals Specialist

Cormix ® H_2O Stop

LIQUID AND POWDER FORM INTEGRAL WATERPROOFING ADMIXTURE BY CRYSTALLIZATION

DESCRIPTION

A high grade easy to handle integral waterproofing admixture for both waterproofing and concrete corrosion protection using unique nanotechnology to chemically modify the cement matrix by reacting with the cement paste to reduce pore & capillary size. The reaction between **Cormix H_2O Stop** and cement paste produces a non-soluble crystalline structure throughout the pores & capillaries permanently sealing the concrete. **Cormix H_2O Stop** is available in two forms liquid or powder.

USES & ADVANTAGES

Uses include for all types of waterproofing and concrete corrosion protection in basements, water tanks, reservoirs, dams, waste water plants, swimming pools, water treatment plants, tunnels, marine structures, concrete highways etc.

Advantages include:-

- Seals micro cracks. Can seal hairline cracks up to 0.5 mm.
- Concrete waterproofed throughout.
- Improved durability. Increases concrete strength
- Protection against Chloride and sulphate ingress.
- Withstands hydrostatic pressure.
- Improves chemical and carbonation resistance.
- Fast tracks construction.
- No installation costs, seams or joints.
- Does not rely on bond to work.
- Permanent waterproofing.
- Integral waterproofer.
- Non toxic. No V.O.Cs.
- Reduces opportunity for freeze thaw damage.
- Improves workability and strength.
- May reduce existing admixture dosage.
- No costly surface preparation.
- Added to concrete not constrained by weather conditions.
- Liquid form does not clump as powders and easy to dose.
- Enhances hydration process.
- Environmentally friendly.

PROPERTIES

	Liquid	Powder
Appearance :	Liquid	Powder
Colour:	Transparent	Grey Powder
pH :	13-14	13-14
Specific Gravity :	Approx. 1.21-1.23	-
Chloride Content : DIN EN 480-10	Nil	Nil
Bulk Density :	-	1.25-1.35

APPLICATION

Cormix H_2O Stop - Liquid

Cormix H_2O Stop is added to the concrete at the time of batching at dosages of 0.8 - 1 litre per 100 kg of total cementitious material by automatic dispensers.

Under certain conditions the dosage used may be 2-3 litre per 100 kg of total cementitious material to meet the specific requirements of a project. For the optimum dosage consult Cormix.

Cormix H_2O Stop - Powder

Cormix H_2O Stop powder should be dosed at of 0.8-1 kg per 100 kg of total cementitious material. As a guide line the following should be followed :

Central mixing operation : -

Mix the **Cormix H_2O Stop** powder with water to form a flowing slurry 25 kg of powder to 7.5-8 kg of water. Pour the mixture into the ready mix lorry. Mix the concrete as normal in the plant reducing the water content to account for that mixed with **Cormix H_2O Stop** pour the concrete into the lorry & mix for at least 5 minutes to ensure good distribution of **Cormix H_2O Stop**.

Dry batch ready mix concrete operations : -

Add the required quantity of **Cormix H_2O Stop** in powder form to the ready mix lorry. Drive the R.M.C lorry under the batch plant & add 60% of the water with 150-250 kg of aggregate mix for 2-3 minutes to ensure good distribution of **Cormix H_2O Stop**. Add the remaining materials to the lorry as normal practice.

Precast concrete plants :-

Add the **Cormix H_2O Stop** to the aggregate and sand mix for 3 minutes before adding cement & water.

***NOTES**: Good dispersion of the admixture is important to get a homogeneous mix. Therefore do not add Cormix H2O Stop powder directly to wet concrete as this may result in clumping & poor dispersion.*

Under certain conditions the dosage used may be 2-3 kg per 100 kg of total cementitious material to meet the specific requirements of a project. For the optimum dosage consult Cormix.

***Note : Cormix H_2O Stop** should be tested in trial mixes to determine the optimum dosage and any necessary changes to existing additive dosages. Do not use without checking workability, slump retention and retardation in advance. Agitate before use the liquid version.*

OVERDOSING

Overdosing of **Cormix H_2O Stop** will result in increased workability and possibly more rapid set. In the case of accidental overdosing check strengths and setting times before stripping forms.
Overdosing normally will have no detrimental long term side effects as long as cured correctly with water before stripping forms. In general 28 day strengths would be improved. If in doubt contact Cormix Technical Department.

STANDARDS

- Compressive strengths at 28 days according to ASTM C 39 showed strength more then control.
- Chloride diffusion is reduced significantly when measured according to ASTM C1202
- Cormix H2O Stop complies to EN 934-2

Cormix ® H_2O Stop

LIQUID AND POWDER FORM INTEGRAL WATERPROOFING ADMIXTURE BY CRYSTALLIZATION

- Cormix H2O Stop when used on Concrete is suitable for Potable Water Contact : BS 6920 -1-2000.
- Cormix H2O Stop is capable of Self-Healing of Cracks upto a Width of 0.5 mm.
- Comply to JIS A 1404 : Depth of Water penetration – Less than Control.
- Comply to BS 1881-P122 : Water Absorption – Less than Control.
- Air Content : Test mix ≤ 2% by volume above control according to BSEN 12350-7 : 2009 and BSEN 12350-1 : 2009.
- Compressive Strength : Test mix ≥ 85% of control according to BSEN 12350-7 : 2009 and BSEN 12390-3 : 2009.
- Capillary absorption :
  Test mix ≤ 50% by mass of control (7 days)
  Test mix ≤ 60% by mass of control (90 days)
  According to BSEN 480-5 : 2005 and BSEN 480-1/BSEN 196-1.
- Water soluble chloride : ≤ 0.1% by weight complies to BSEN 480-10 : 1997.
- Total chloride content : ≤ 0.1 % by weight complies to ISO 1158 : 1998.
- Alkali content : <3% by weight (powder) and < 15 % by weight (liquid) complies to BSEN 480-12 : 1998
- Silica content : <50% by weight (powder) and < 1% by weight (liquid) complies to BSEN 196-2.
- Dry material content : > 95% by weight (powder) and > 30±5 % by weight (liquid) complies to BSEN 480-8 : 2012.
- Density : 1.21-1.23 kg/litre (liquid) complies to BS 4522 :1988.
- pH : 13-14 complies to ISO 4316 : 1977
- Complies to (WRAS) water regulations advisory scheme specification according to BS6920-Part 1 :2014
- Complies REACH requirements as per article 33 (1) of the REACH REGULATION (EC 1907/2006).

PACKAGING

Cormix H_2O Stop (Liquid) is available in 200 ltr drum & 1,000 ltr IBC.
Cormix H_2O Stop (Powder) is available in 25 kg paper bags or 25 kg plastic pails.

STORAGE & SHELF LIFE

The product must be stored shaded at a minimum temperature of 45ºF (7ºC). Shelf life is one year when stored under proper conditions in original unopened packaging. Agitate the liquid form before use and protect from freezing.

HEALTH & SAFETY

Cormix H_2O Stop is highly alkaline. Protect hands with rubber gloves and wear safety goggles during mixing & application. Avoid contact with skin or eyes. Should contact occur, flush copiously with water. If irritation persists, contact a physician.

TECHNICAL SERVICE

Technical assistance including mix design preparation and supervision on site during incorporation of **Cormix H_2O Stop** is available by contacting Cormix International Limited.

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International

DCL PRODUCT CONFORMITY
BS EN 934-2
Certificate No. CL19020718

Cormix International Limited
89 Romklao Rd, Sansab,
Minburi, Bangkok 10150
EN 934-2
Water Resisting Admixtures

Capillary absorption:	
7 days curing:	≤ 50 %
90 days curing:	≤ 60 %
Compressive Strength:	≥ 85 % 28 days
Air Content in fresh concrete:	≤ 2 %

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.
The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Cormix ® H2O Stop + Cl

TWO IN ONE CRYSTALLINE CONCRETE ADMIXTURE AND CORROSION INHIBITOR

DESCRIPTION

A high grade easy to handle integral waterproofing admixture for both waterproofing and concrete corrosion and reinforcement protection, using unique nanotechnology to chemically modify the cement matrix by reacting with the cement paste to reduce pore & capillary size. The reaction between **Cormix H_2O Stop+Cl** and cement paste produces a non-soluble crystalline structure throughout the pores & capillaries permanently sealing the concrete. In addition reinforcing steel is protected from corrosion by the addition of a corrosion inhibitor.
Cormix H_2O Stop+Cl is available in two forms liquid or powder.
Complies to EN1504 Part 9
- Principle 9 Cathodic Control (CC)
  Method 9.1 : Limiting oxygen content (at the cathode) by saturation or surface coating.
- Principle 11 Control of the anodic areas (CA)
  Method 11.3 : Applying corrosion inhibitors on concrete.

USES & ADVANTAGES

Uses include for all types of waterproofing and concrete corrosion protection in basements, water tanks, roofs, reservoirs, dams, waste water plants, pipes, swimming pools, water treatment plants, tunnels, marine structures etc.
Advantages include:-
- Available in liquid & powder form.
- Two in one product.
- Protects reinforcement from corrosion.
- Seals micro cracks. Can seal hairline cracks up to 0.5 mm.
- Concrete waterproofed throughout.
- Improved durability.
- Protection against Chloride and sulphate ingress.
- Withstands hydrostatic pressure.
- Improves chemical and carbonation resistance.
- Fast tracks construction.
- No installation costs, seams or joints.
- Does not rely on bond.
- Permanent waterproofing.
- Integral waterproofer.
- Non toxic.
- Reduces opportunity for freeze thaw damage.
- Improves workability and strength.
- May reduce existing admixture dosage.
- No costly surface preparation.
- Added to concrete not constrained by weather conditions.
- Liquid does not clump as powders and easy to dose.
- Enhances hydration process.

PROPERTIES

	Liquid	Powder
Appearance :	Liquid	Powder
Colour:	Transparent to pale yellowish liquid	Grey Powder
pH :	10-12	13-14
Specific Gravity :	Approx. 1.15-1.17	-
Chloride Content :	Nil	Nil
Bulk Density :	-	1.25-1.35

APPLICATION

Cormix H_2O Stop+Cl - Liquid
Cormix H_2O Stop+Cl is added to the concrete at the time of batching at dosages of 0.8-1 litre per 100 kg of total cementitious material by automatic dispensers. Under certain conditions the dosage used may be 2-3 litre per 100 kg of total cementitious material to meet the specific requirements of a project. For the optimum dosage consult Cormix.

Cormix H_2O Stop+Cl - Powder
Cormix H_2O Stop+Cl powder should be dosed at of 0.8-1 kg per 100 kg of total cementitious material. As a guide line the following should be followed :

Under certain conditions the dosage used may be 2-3 kg per 100 kg of total cementitious material to meet the specific requirements of a project. For the optimum dosage consult Cormix.

***Note : Cormix H_2O Stop+Cl** should be tested in trial mixes to determine the optimum dosage and any necessary changes to existing additive dosages. Do not use without checking workability, slump retention and retardation in advance. Agitate before use the liquid version.*

Central ready mix concrete mixing operation : -
Mix the **Cormix H_2O Stop+Cl** powder with water to form a flowing slurry 25 kg of powder to 7.5-8 kg of water. Pour the mixture into the ready mix lorry. Mix the concrete as normal in the plant reducing the water content to account for that mixed with **Cormix H_2O Stop+Cl** pour the concrete into the lorry & mix for at least 5 minutes to ensure good distribution of **Cormix H_2O Stop+Cl**.

Dry batch ready mix concrete operations : -
Add the required quantity of **Cormix H_2O Stop+Cl** in powder form to the ready mix lorry. Drive the R.M.C lorry under the batch plant & add 60% of the water with 150-250 kg of aggregate mix for 2-3 minutes to ensure good distribution of **Cormix H_2O Stop+Cl**. Add the remaining materials to the lorry as normal practice.

Precast concrete plants :-
Add the **Cormix H_2O Stop+Cl** to the aggregate and sand mix for 3 minutes before adding cement & water.

***NOTES**: Good dispersion of the admixture is important to get a homogeneous mix. Therefore do not add **Cormix H_2O Stop+Cl** powder directly to wet concrete as this may result in clumping & poor dispersion.*

OVERDOSING

Overdosing of **Cormix H_2O Stop+Cl** will result in increased workability and possibly more rapid set. In the case of accidental overdosing check strengths and setting times before stripping forms.
Overdosing normally will have no detrimental long term side effects as long as cured correctly with water before stripping forms. In general 28 day strengths would be improved.
If in doubt contact Cormix Technical Department.

Cormix ® H2O Stop + CI

TWO IN ONE CRYSTALLINE CONCRETE ADMIXTURE AND CORROSION INHIBITOR

STANDARDS

- Compressive strengths at 28 days according to ASTM C 39 showed strength more than control.
- Chloride diffusion is reduced significantly when measured according to ASTM C1202
- **Cormix H2O Stop+CI** complies to EN 934-2
- **Cormix H2O Stop+CI** when used on Concrete is suitable for Potable Water Contact : BS 6920 -1-2000.
- **Cormix H2O Stop+CI** is capable of Self-Healing of Cracks upto a Width of 0.5 mm.
- Comply to BSEN12390 Part 8 / DIN 1048 Part 5 : Depth of Water Penetration – Less than Control.
- Comply to BS 1881-P122 : Water Absorption – Less than Control.

PACKAGING

Cormix H_2O Stop+CI (Liquid) is available in 25 ltr pail & 200 ltr drum.
Cormix H_2O Stop+CI (Powder) is available in 25 kg paper bags or 25 kg plastic pails.

STORAGE & SHELF LIFE

The product must be stored shaded at a minimum temperature of 45ºF (7ºC). Shelf life is one year when stored under proper conditions in original unopened packaging. Agitate the liquid form before use and protect from freezing.

HEALTH & SAFETY

Cormix H_2O Stop+CI is highly alkaline. Protect hands with rubber gloves and wear safety goggles during mixing & application. Avoid contact with skin or eyes. Should contact occur, flush copiously with water. If irritation persists, contact a physician.

TECHNICAL SERVICE

Technical assistance including mix design preparation and supervision on site during incorporation of **Cormix H_2O Stop+CI** is available by contacting Cormix International Limited.

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.
The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Website: http://www.cormix.com
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Cormix ® CI

CORROSION INHIBITING CONCRETE AND MORTAR ADMIXTURE

DESCRIPTION

Cormix CI is a water based organic corrosion inhibiting concrete admixture for use in reinforced concrete and repair mortars. When **Cormix CI** comes into contact with steel it has an ionic attraction to it forming a protective layer. The CI affinity to metal is greater than water, chlorides and other corrosive materials. **Cormix CI** provides protection to the rein-forcement acting as a corrosion inhibitor extending the life expectancy of the structure. It may be used in conjunction with the **Contite crystalline series** of products, which provide concrete corrosion protection giving a total concrete protection solution.

USES & ADVANTAGES

Cormix CI is used in concrete in areas where the reinforcement is in risk of corrosion. It has been developed especially for use where chlorides are in evidence. Typical structures that would incorporate this material are as follows :-

Marine structures, subways in salt bearing ground water, bridges, waste water plants, tunnels, industrial plants, structures exposed to deicing salts such as car parks etc.

Advantages include:

- Reduction of both anodic & cathodic reaction in the electrochemical corrosion process. (Ambiodic)
- Provides a passive film delaying the start of corrosion and reducing the rate.
- Particular protection against chloride attack.
- No effect on properties of concrete in wet & dry state.
- Non toxic.
- No effect on hydrogen embrittlement of prestressing cables.
- Protection against reinforcement corrosion.
- Used in conjunction with **Contite** crystalline corrosion protection provides total concrete protection.
- Enhances the service life of concrete structures in corrosive environments e.g. chlorides and carbonation.
- Meets international standards including ASTM G102 and ASTM C1582.
- Low dosage.
- Migrates through porous concrete.
- Earns LEED credits.

PROPERTIES AND COMPLIANCES

Appearance : Clear to light yellow

Density : 1.03 ± 0.02 kg/ltr.

pH : 9-11.

STANDARD

PROPERTIES	STANDARD	RESULT
Density	ASTM C138	As control
Setting Times	ASTM C403	Slight delay
Compressive Strengths	ASTM C192	Improved
Flexural Strengths	ASTM C78	Improved
Air Content	ASTM C231	As control
Slump / Workability Retention	ASTM C143	As control
Corrosion Resistance	ASTM C1582 ASTM G102 ASTM G180	As control Complies with requirements

ASTM G102 - CORROSION RESISTANCE PROPERTIES		
Product	**I_{corr} ($\mu A/Cm^2$)**	**Corrosion rate (mpy, mm/y)**
Control	887.72	401.0504, 10.1819
Cormix CI	84.77	38.7838, 0.9847

Note : **Cormix CI** reduces the Corrosion rate by 90% when compared to control.

DOSAGE

The dosage range is 0.6-1.2 litres/m^3 of concrete. Recommended dosage = 0.6 litre/cubic metre of concrete.

PACKAGING

25 litre & 200 litre plastic drums.

STORAGE

Protect from frost and direct sunlight store at 5ºC-35ºC

SHELF LIFE

12 months stored in original unopened packaging at temperatures not exceeding 35ºC or lower than 5ºC.

COMPATIBILITY WITH OTHER ADMIXTURES

Cormix CI is compatible with most Cormix admixture proving trials are recommended to confirm the results.

Cormix ® CI

CORROSION INHIBITING CONCRETE AND MORTAR ADMIXTURE

DOSING

Cormix CI is dosed into the concrete mixes at the same time as the water. It may also be added at the point of placement with at least one minutes extra mixing, before discharge check for uniform consistency.

The W/C ratio should be adjusted according to quantity of **Cormix CI** added to the mix. Follow standard good practise for producing high quality, concrete, placing, compaction and curing.

HEALTH & SAFETY

Eye contact : Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Eyelids should be held away from the eyeball to ensure thorough rinsing. Obtain medical attention urgently.

Skin contact : Wash skin thoroughly with soap and water.

Obtain medical attention if blistering occurs or redness persists. Contaminated clothing should be washed or dry-cleaned before re-use.

Ingestion : Do not induce vomiting. Wash out mouth with water. If vomiting occurs naturally, lean victim forward to reduce risk of aspiration.

Obtain medical attention urgently

Inhalation : Remove from exposure. In cases of possible respiratory irritation or if feeling unwell due to prolonged exposure, obtain medical attention.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

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Cormix ® W1

WATERPROOFING ADMIXTURE FOR CONCRETE AND MORTAR

DESCRIPTION

Cormix W1 is a permeability reducing admixture in liquid form for use in all types of mortar and concrete mixes. **Cormix W1** conforms to ASTM C494-81 Type A, BS 1881 : Part 5 1970 and BS 5075 Part 1.

USES & ADVANTAGES

Cormix W1 may be used to waterproof concrete structures such as: reservoirs, tunnels, culverts, water tanks, swimming pools and other areas where waterproof concrete or mortar is required.

Advantages include:-

- Improves workability and cohesion.
- Improves strength and durability.
- Reduces shrinkage.
- Reduces permeability.
- Chloride free.
- Allows better compaction.
- No effect on drinking water in concrete tanks.

PROPERTIES

Appearance : Brown liquid

Specific gravity : 1.21 - 1.23

APPLICATION

Cormix W1 should be dispensed with the mixing water. **Cormix W1** is compatible with most other admixtures, however, as **Cormix W1** has a water reducing effect and limited retardation trial mixes should be undertaken before pouring concrete. Overdosing will cause some retardation of initial set the concrete should not be disturbed but left to cure properly.

In case of overdose, extended retardation or mixing with other admixtures contained in the concrete consult Cormix International Technical Department.

CURING

Concrete containing **Cormix W1** still requires adequate curing use **Corcure 90.**

DOSAGE

0.2 - 0.5 litre per 100 kg of total cementitious material. Trial mixes are always recommended before starting work to ascertain the best dosage level.

PACKAGING

25 Litre plastic pails and 200 litre steel drums.

STORAGE & SHELF LIFE

Cormix W1 should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out.

The shelf life is a minimum of 12 months in original unopened packaging

HEALTH & SAFETY

Cormix W1 is formulated from chemicals which present no fire or health hazards.

For further information consult Cormix International.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Congrout ® A (Formerly Cormix A)

PLASTICISING GROUT INJECTION AID

DESCRIPTION

A ready to use grout injection aid in powder form. A multi component non chloride containing admixture which allows for the reduction in water cement ratio with corresponding strength increases. Expansion ensures good interfacial contact is maintained.

USES & ADVANTAGES

Use for the grouting of prestressed cable ducts, bearing plates, tunnel linings, rock & soil anchoring etc.

Advantages include:-

- Reduces mix water.
- Retards setting, prolongs workability.
- Provides fluid phase expansion.
- Reduces bleeding and segregation.
- Good strength and adhesion.
- Improved cohesion.
- Improved fluidity.
- Protects against corrosion of prestressing wires.

PROPERTIES

Appearance:	Beige/Light Brown powder
Apparent Density:	0.9 - 1.0 kg/ltr
Chloride Content:	Nil
Cement Compatibility:	Compatible with all types of Portland cement
Expansion Time:	15 - 120 minutes
Expansion:	According to ASTM C-827 an unrestrained expansion of 1-4% is typical depending on temperatures, dosage & mix.
Strength:	Restrained grouts up to 15% increase due to lower water cement ratio. Complies with CP110 Part 1: 1972 Section 6.12

METHOD OF USE / APPLICATION

Mixing times and w/c vary according to the application. With standard mechanical mixing for prestressed concrete work, a mixing time of 4 minutes with a w/c of 0.35 - 0.40 gives the best results.
The best mixing sequence is normally water / **Congrout A** /cement.

IMPORTANT NOTES

Congrout A is generally used in the highly specialized work of grouting and prestressing. Properties of **Congrout A** may be influenced by mixing procedure, cement properties, adding of water and temperatures. Therefore tests on site should be undertaken.
Congrout A should not be used with cement containing fly ash.

DOSAGE

Dose at 1.0 - 2.0% by weight of cement.

PACKAGING

0.5 kg. packs or 15 kg. bags.

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 12 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Wear gloves when mixing. Splashes on skin or eyes should be washed off with clean water.
Congrout A is non flammable.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data. The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

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Rev.010 Sep 2021

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Congrout ® Aid

GROUT OR CONCRETE ADDITIVE

DESCRIPTION

Congrout Aid is an expansive admixture for grouting mortars or concrete. **Congrout Aid** produces a non shrink grout or concrete.

USES & ADVANTAGES

Use in grouts for bridge bearing, anchors machine foundations, steel columns etc. May be used in concrete to reduce shrinkage.

Advantages include:-

- Excellent flow.
- No bleeding.
- High strengths.
- Good dimensional stability.
- Good filling properties.

PROPERTIES

Appearance: Beige powder
Specific Gravity: 1.21 kg/litre
Density Mixed: Approx. 2.2 kg/litre

APPLICATION

Ensure the substrate is correctly prepared. No contamination and saturated with water at least 3-4 hours prior to pouring the grout. No free water should be left.
Ensure air entrained into the grout is able to escape. Maintain continuous head when base-plate grouting. Mortar flow should not be interrupted. Formwork should not allow grout loss. Prepare mortar in the following sequence. Fill water into mixer, then add sand followed by cement and lastly **Congrout Aid.** Do not mix for more than 2-3 minutes. After mixing immediately pour the mortar/grout into the prepared cavity. For mixing use a grout mixer or low speed drill (max. 500 rpm.) with a disc agitator.

Notes:

i. If wet sand is used reduce water content.
ii. Sand should be well graded, clean river sand 0-3 mm.
iii. Good curing practise must be maintained e.g. **Corcure 90** curing compound.

CONSUMPTION

Example of mix design for 1 m^3 of mortar. Water can be varied depending on flow requirements.

Cement Type I	838 kg.
Sand	930 kg.
Congrout Aid	91 kg.
Water	372 litre

PACKAGING

20 kg. 4 ply plastic lined bags.

CLEANING

Clean all tools immediately after use with water.

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 12 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Congrout Aid is non-hazardous, but work cleanly and wear protective clothing. In windy conditions wear a filter mask to avoid inhaling dust. Remove splashes from skin with water and in case of eye contact wash copiously with water.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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ISO 14001 : 2015 verified by Lloyd's Register International.

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Rev.009 Mar 2023

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Congrout ® Admix

PLASTICISED EXPANDING GROUT ADMIXTURE

DESCRIPTION

Congrout Admix is a powdered admixture for use in cementitious grouts and concrete. It is formulated to produce improved grout quality and increased durability, while overcoming problems of settlement and plastic shrinkage using a gaseous expansion mechanism.

USES & ADVANTAGES

Congrout Admix should be used as a grout admixture for all cementitious mixes where restrained expansion is required. Typical uses are under plate and bed grouting, space grouting, anchor bolt and duct grouting.

Advantages include:-

- Provides positive gaseous expansion to counteract shrinkage in cementitious grouts.
- High flow grout mixes obtained using **Congrout Admix** are easier to pump or place.
- Low water/cement ratio obtainable with **Congrout Admix** reduces permeability, improves strength and durability.
- Produces cementitious grouts with excellent noncorrosive bonding and maximum bearing capacity.
- **Congrout Admix** contains no iron, chlorides or other deleterious materials.

PROPERTIES

Appearance:	Grey powder
Apparent Density:	Approx. 0.7 kg. /l.
Chloride Content:	Nil

MIXING

The required quantities of sand, cement and **Congrout Admix** are batched together and mixed into the correct volume of water, using a mechanically powered mixer.
Small quantities can be mixed using a slow speed electric drill fitted with a high shear paddle. Larger quantities require a purpose-designed grout mixer to achieve thorough mixing. Mix continuously for 5 minutes to ensure that a smooth homogeneous grout is obtained.
It is important that sufficient materials, equipment and personnel are available to enable the grouting operation to be carried out continuously.
Storage or holding facilities for the grout may be useful, however, they should be fitted with some means of agitation to maintain fluidity.

APPLICATION

Areas to be grouted require thorough preparation in the conventional manner, to provide a clean, sound, substrate free from defects or contamination. Pre-wet the surfaces to be grouted preferably 24 hours before grouting, removing excess free water and then grout.

The grout should be poured, pumped, injected or troweled into place within 30 minutes of mixing, to achieve optimum expansion characteristics.

Addition Rate:

Neat cement grouts	250 g. **Congrout Admix** per 50 kg. cement equivalent to 0.5% by weight of cement.
1 : 1 Cement : sand grouts	250 g. **Congrout Admix** per 50 kg. cement equivalent to 0.5% by weight of cement.
Grouts having : Cement Ratio of 2 : 1 or higher	500 g. **Congrout Admix** Sand per 50 kg. cement equivalent to 1.0% by weight of cement.

Yield:

OPC	0.5 mm Sand	Water	Congrout Admix	Approx. Yield
50 kg.	Nil	22 litre	250 gram	36 litre
50 kg.	50 kg.	24 litre	250 gram	57 litre
50 kg.	100 kg.	26 litre	500 gram	80 litre

Water Content:

The plasticising action of **Congrout Admix** enables high flow grout mixes to be produced, using low water / cement ratios. Alternatively, water contents can be reduced while maintaining workability - a water reduction of 10% - 15% is typical.

Loss of Flow:

Cementitious grout mixes containing **Congrout Admix** have slightly extended placement times without detriment to strength development.

Expansion:

Unrestrained expansion is typically between 1-4%. The controlled positive expansion in wet grout overcomes plastic settle according to ASTM C-827. Expansion takes place between 15 minutes & 2 hours after mixing.

CURING

Good curing is essential on all exposed surfaces particularly in dry, sunny conditions. Failure to do so will reduce strength and durability. Immediately after completion, apply two coats of **Corcure 90** curing/ membrane to all exposed surfaces. Alternative methods are water ponding, mist spraying and the like, but in all cases these must be maintained for at least 7 days. Keep the grout above 8°C at all times during application and cure.

Congrout ® Admix

PLASTICISED EXPANDING GROUT ADMIXTURE

OVERDOSING

Slight overdosing will increase both workability and volume of gas liberated. Serious overdosing (2 - 3 times recommended values) causes retardation of set and strength development and frothing of the mix. In addition there is a major increase in expansion.

IMPORTANT NOTES

Congrout Admix's performance may be influenced by mixing procedures, cement properties adding of water and temperatures. Therefore tests on site should be undertaken.
Congrout Admix should not be used with cement containing Fly Ash.

DOSAGE

0.5 - 2% by weight of cement.

PACKAGING

Congrout Admix is supplied in 0.5 kg. packs or 15 kg. bags.

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 12 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Congrout Admix is non-hazardous, but work cleanly and wear protective clothing. In windy conditions wear a filter mask to avoid inhaling dust. Remove splashes from skin with water and in case of eye contact wash copiously with water.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

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Cormix ® R1TP3

WATER REDUCING PLASTICISING AND RETARDING CONCRETE ADMIXTURE

DESCRIPTION

Cormix R1TP3 is a high performance low dosage liquid retarding and water reducing agent, used to improve the workability of concrete mixes or to permit effective reductions in the free water content.

Cormix R1TP3 is formulated from carefully selected raw materials and is manufactured under controlled conditions to give a consistent product. It is based on a modified organic agent and complies with ASTM C494-81 Type A, B and D, BS EN934 Part 2

USES & ADVANTAGES

Cormix R1TP3 is used where high quality concrete is required, for example, in hot climates in the production of ready mix concrete, site concrete and R.C.C.

Advantages include:-

- Extension of slump in high temperatures.
- Workability improvement to most types of concrete mixes.
- Increased strengths.
- Reduced water without loss in workability.
- Can be used for pumped concrete.
- Increased setting times in high temperature.
- Effective in achieving cement economies.
- Improves surface finishes and overcomes blemishes.

PROPERTIES

Appearance:	Dark brown liquid
Specific Gravity:	1.20 - 1.22
Air Entrainment:	1 - 2%
pH Value:	4.5-6
% Solids:	37%
Chloride Content :	Nil

Compatibility with cements :

Cormix R1TP3 can be used with all types of Portland Cement and pozzolanic materials such as P.F.A., G.G.B.F.S. and Silica fume. For use with special cements we recommend that you consult Cormix International.

Compatibility with other admixtures :

Cormix R1TP3 should not be premixed with other admixtures. The performance of the material may be affected by the presence of other chemicals and we would recommend that Cormix International Ltd be consulted in such circumstances.

METHOD OF USE

Cormix R1TP3 is supplied ready for use, it should be added to concrete mixes during the mixing process at the same time as the water or the aggregates. It should not be added directly to the cement. No extension of normal mixing time is necessary.

DOSAGE RATES

The performance of **Cormix R1TP3** is best assessed after preliminary tests on site using the actual concrete under consideration to determine the optimum dosage

As a guide to these trials, an addition rate of 0.2 - 0.5 litre per 100 kg of total cementitious material, is recommended for standard RMC. For concretes such as Roller Compacted Concrete dosages as high as 0.7-1.5 litre per 100 kg of total cementitious material. The rate of addition can be varied to give different results. For advice and assistance with your trials we would recommend that you consult Cormix International.

EFFECTS OF OVER-DOSING

Over-dosing of **Cormix R1TP3** will cause an extension of initial setting time. If this happens consult Cormix.

If intentional or accidental increases above the recommended addition rate are employed, care must be taken to allow for the effect on the stripping of formwork. In such cases, however, provided the concrete is properly cured, the ultimate strength will generally be higher than for normal concrete.

PACKAGING

Cormix R1TP3 is supplied in 200 litre steel drums. Alternatively bulk deliveries can be arranged.

STORAGE & SHELF LIFE

Cormix R1TP3 should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out, to restore it to its normal state.

The shelf life is 12 months when stored in original unopened containers.

HEALTH & SAFETY

Cormix R1TP3 is formulated from chemicals that present no fire or health hazards. Do not take internally. If on skin wash off with soap and water. If in eyes wash out with copious amounts of water and seek medical attention. For further information consult Cormix International Ltd.

TECHNICAL SERVICE

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QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

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Cormix ® P2

WATER REDUCING PLASTICISING AND RETARDING CONCRETE ADMIXTURE

DESCRIPTION

Cormix P2 is a high performance liquid mid range concrete plasticiser and retarder or water reducing agent used to improve the workability of concrete mixes or to allow an effective reduction in free water content to be made. The effect is achieved by its absorption on to the surface of the cement particles in a concrete mix giving a powerful deflocculating action.

Cormix P2 is formulated from carefully selected raw materials and is manufactured under controlled conditions to give a consistent product. It is based on a high grade, modified lignosulphonic and carboxylic acid derivative and depending on addition rate conforms to Type A, B and D materials of ASTM designation C494-81 and with BS5075 : Part 1, GB 8076-1997, BS 5075 Part 1, BS:EN934-2:1998, ASTM C1017 as Type 1 and Type 2.

USES & ADVANTAGES

Cormix P2 is used to produce workable and dense concrete in for example, dams, tunnels, runways, canals, reservoirs, ports, and marine structures etc. It is widely used in ready mix & site concrete.

Advantages Include:-

- Extension of slump in high temperatures.
- Workability improvement to most types of concrete mixes.
- Increased early compressive & flexural strengths.
- A 15-20% water reducing effect can be obtained.
- Reduced water without loss in workability.
- Can be used for pumped concrete.
- Effective in achieving cement economies.
- Extended setting times in high temperatures.
- Improves surface finishes.

PROPERTIES

Appearance:	Dark brown liquid
Specific Gravity:	1.16-1.18 kg/ltr
Air Entrainment:	1 - 2 %
pH Value:	approx. 4 - 7
Chloride Content:	Nil

Compatibility with Cements:

Cormix P2 can be used with all types of Portland cement, concrete containing fly ash, silica fume or G.G.B.F.S. For use with special cements we recommend that you consult Cormix.

Compatibility with Other Admixtures:

Cormix P2 should not be premixed with other admixtures. The performance of the material may be affected by the presence of other chemicals and we would recommend that Cormix International be consulted in such circumstances.

METHOD OF USE / APPLICATION

Cormix P2 is supplied ready for use, it should be added to concrete mixes during the mixing process at the same time as the water or the aggregates. It should not be added directly to the cement. No extension of normal mixing time is necessary.

DOSAGE

The performance of **Cormix P2** is best assessed after preliminary tests on site using the actual concrete under consideration to determine the optimum dosage and effect on properties such as compressive strength, setting times, shrinkage etc., when these are of consequence.

As a guide to these trials, an addition rate of 0.3-0.7 litre per 100 kg of total cementitious material, is recommended. This rate of addition can be varied to give different results. For advice and assistance with your trials we would recommend that you consult Cormix.

EFFECTS OF OVER-DOSING

Over-dosing of **Cormix P2** will cause an extension of initial setting time. If this happens consult Cormix.

If intentional or accidental increases above the recommended addition rate are employed, care must be taken to allow for the effect on the stripping of formwork. In such cases, however, provided the concrete is properly cured, the ultimate strength will generally by higher than for normal concrete.

DISPENSING

It is preferable that liquid admixtures for concrete should be introduced into a mixer by means of automatic dispensing equipment. Such equipment is available from Cormix.

PACKAGING

Cormix P2 is supplied in 200 litre steel drums. Alternatively bulk deliveries can be arranged.

Cormix ® P2

WATER REDUCING PLASTICISING AND RETARDING CONCRETE ADMIXTURE

STORE & SHELF LIFE

Cormix P2 should be protected from frost. If frozen remix on thawing. Storage under high temperatures causes no adverse effect. The shelf life is a minimum of 12 months in original packaging.

HEALTH & SAFETY

Cormix P2 is formulated from chemicals which present no fire or health hazards. Do not take internally. If on skin wash off with soap and water. If in eyes wash out with copious amounts of water and seek medical attention. For further information consult Cormix's MSDS.

TECHNICAL SERVICE

The Cormix International Limited 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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International

DISCLAIMER

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Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Cormix ® SP1

HIGH RANGE WATER REDUCING SUPERPLASTICISER

DESCRIPTION

Cormix SP1 is a highly effective water reducing superplasticiser and an extremely powerful deflocculating agent, it operates by dispersing cement in to its primary particles which dramatically increases the flow characteristics of the cement paste. Based on the soluble salt of a polymeric sulphonate it conforms to Type A and F materials of ASTM C494 and BSEN 934-2 1998.

USES & ADVANTAGES

Uses include to produce flowing concrete for large pours and precast elements. **Cormix SP1** may also be used where substantial water reductions are required to provide high early and ultimate strengths e.g. in precast factories.

Advantages include:

- High strength concrete produced at normal workability and cement contents. The resultant concrete is of a dense impermeable nature.
- Substantial increase in workability without additional water.
- Normal setting without retardation.
- Very good early strengths.
- Significant strength increases.
- Increased production in precast yards.
- Better surface finish.
- Waterproof concrete may be achieved.
- Better resistance to wear & abrasion.
- Chloride free.
- Reduced shrinkage & creep.
- Suitable for hot climates.
- Improved water borne salt resistance.

PROPERTIES

Appearance: Brown liquid

Chemical: Napthalene Formaldehyde Sulphonate

Specific Gravity: 1.20 - 1.23 approx. at 20°C

pH Value: 7-9

Chloride Content: Nil

Compatibility with Cements:

Cormix SP1 can be used with all types of Portland Cement and pozzolanic materials.

Cormix SP1 is compatible with P.F.A., G.G.B.F.S. and Silica fume. For use with special cements we recommend that you consult Cormix International Ltd.

Compatibility with Other Admixtures:

Cormix SP1 should not be premixed with other admixtures. Consult Cormix when using other admixtures.

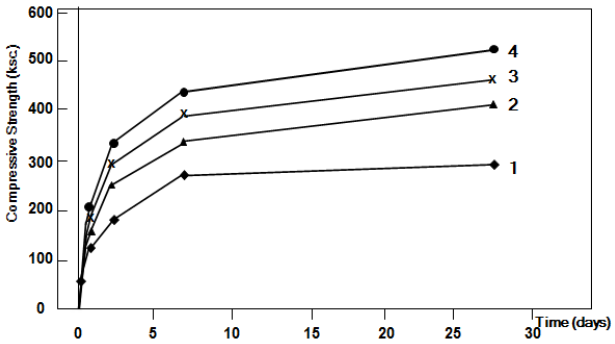
METHOD OF USE / APPLICATION

Cormix SP1 is supplied ready for use, it should be added to concrete mixes during the mixing process at the same time as the water or the aggregates. It should not be added directly to the cement.

DOSAGE

0.5 - 3.0 litre per 100 kg of total cementitious material. Exact dosage rates should be determined by trial mixes.

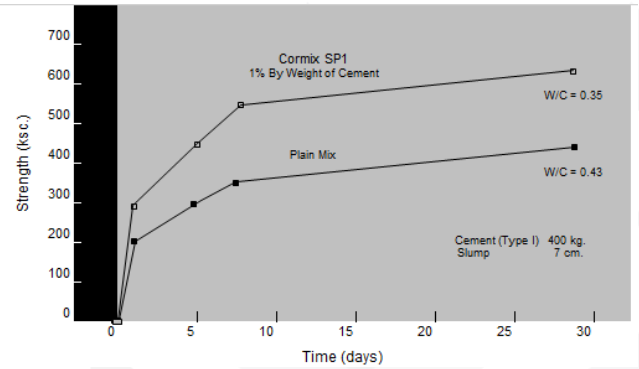
TYPICAL STRENGTH DEVELOPMENTS USING CORMIX SP1



Development of compressive strength with different dosages of **Cormix SP1**.
Concrete: Cement Type I = 380 kg/m^3
Consistency: Slump 8 cm for all mixes
Temperature 30°C

No.	Dosage **Cormix SP1**	W/C
1	None	0.50
2	0.50%	0.44
3	1.00%	0.37
4	1.50%	0.35

Cormix SP1 - High Early Strength
Reduced W/C = 0.35 Temp. 30°C



EFFECTS OF OVER-DOSING

Over-dosing of **Cormix SP1** will generally produce a considerable increase in workability. Providing over dosed concrete is properly cured the ultimate strength will generally be higher than of a normal concrete.

Cormix ® SP1

HIGH RANGE WATER REDUCING SUPERPLASTICISER

PACKAGING

Cormix SP1 is supplied in 200 litre steel drums.

Alternatively bulk deliveries can be arranged.

STORAGE & SHELF LIFE

Cormix SP1 should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out, to restore it to its normal state.

Cormix SP1 can also be stored under high, ambient temperatures, without any adverse effect on its performance.

The shelf life is at least 12 months when stored in original unopened containers.

HEALTH & SAFETY

Cormix SP1 is formulated from chemicals which present no fire or health hazards.

Do not take internally. If on skin wash off with soap and water. If in eyes wash out with copious amounts of water and seek medical attention.

For further information consult Cormix International Ltd.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Cormix ® SP1A

HIGH RANGE WATER REDUCING SUPERPLASTICISER WITH HIGH EARLY STRENGTH PROPERTIES

DESCRIPTION

Cormix SP1A is a highly effective water reducing superplasticizer, an extremely powerful deflocculating agent, it operates by dispersing cement in to its primary particles which dramatically increases the flow characteristics of the cement paste. Based on the soluble salt of a polymeric sulphonate it conforms to Type A and F materials of ASTM C494 and EN 934-2 Table 7

USES & ADVANTAGES

Cormix SP1A may be used to produce flowing concrete with high early & ultimate strengths or in the production of precast concrete that requires substantial water reductions and very high early strengths.

Advantages include:-

- High strength concrete produced at normal workability and cement contents. The resultant concrete is of a dense impermeable nature.
- Substantial increase in workability without additional water.
- Normal setting without retardation.
- Very high early strengths.
- Significant strength increases.
- Increased production rates in precast yards.
- Better surface finish.
- Waterproof concrete may be achieved.
- Better resistance to wear & abrasion.
- Chloride free.
- Reduced shrinkage & creep.
- Suitable for hot climates.
- Improved water borne salt resistance.
- Substantial cement reductions due to accelerated early strengths.

PROPERTIES

Appearance: Brown liquid
Chemical: Napthalene Formaldehyde Sulphonate
Specific Gravity: 1.18 - 1.20 approx. at 20°C
pH Value: 7-9
Chloride Content: Nil

Compatibility with Cements:

Cormix SP1A can be used with all types of Portland Cement and pozzolanic materials.

Cormix SP1A is compatible with P.F.A., G.G.B.F.S. and Silica fume. For use with special cements we recommend that you consult Cormix International Ltd.

Compatibility with Other Admixtures:

Cormix SP1A should not be premixed with other admixtures. Consult Cormix when using other admixtures.

METHOD OF USE / APPLICATION

Cormix SP1A is supplied ready for use, it should be added to concrete mixes during the mixing process at the same time as the water or the aggregates. It should not be added directly to the cement.

DOSAGE

1.0-3.0 litre per 100 kg of total cementitious material. Exact dosage rates should be determined by trial mixes.

EFFECTS OF OVER-DOSING

Over-dosing of **Cormix SP1A** will generally produce a considerable increase in workability. Providing over dosed concrete is properly cured the ultimate strength will generally be higher than of a normal concrete.

PACKAGING

Cormix SP1A is supplied in 200 litre steel drums. Alternatively bulk deliveries can be arranged.

STORAGE & SHELF LIFE

Cormix SP1A should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out, to restore it to its normal state.

Cormix SP1A can also be stored under high, ambient temperatures, without any adverse effect on its performance.

The shelf life is at least 12 months when stored in original unopened containers.

HEALTH & SAFETY

Cormix SP1A is formulated from chemicals which present no fire or health hazards.

Do not take internally. If on skin wash off with soap and water. If in eyes wash out with copious amounts of water and seek medical attention.

For further information consult Cormix International Ltd.

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.

Cormix ® SP1A

HIGH RANGE WATER REDUCING SUPERPLASTICISER WITH HIGH EARLY STRENGTH PROPERTIES

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Cormix ® SP1B

HIGH RANGE WATER REDUCING SUPERPLASTICISER

DESCRIPTION

Cormix SP1B is a highly effective water reducing superplasticizer and an extremely powerful deflocculating agent, it operates by dispersing cement in to its primary particles which dramatically increases the flow characteristics of the cement paste. Based on the soluble salt of a polymeric sulphonate it conforms to Type A, D and G materials of ASTM C494 and BSEN 934-2 1998.

USES & ADVANTAGES

Cormix SP1B has been specifically formulated to allow use both in precast concrete & R.M.C. applications. Uses include to produce flowing concrete in :- congested areas, slabs and foundations, large pours, beams, columns and precast elements.

Cormix SP1B may also be used where substantial water reductions are required to provide high early and ultimate strengths e.g. in precast factories, prestressed concrete, bridges, shotcreting

Advantages include:

- Low cost solution for large precast projects.
- High strength concrete produced at normal workability and cement contents. The resultant concrete is of a dense impermeable nature.
- Substantial increase in workability without additional water.
- Normal setting without retardation.
- Very good early strengths.
- Significant strength increases.
- Increased production in precast yards.
- Better surface finish.
- Waterproof concrete may be achieved.
- Better resistance to wear & abrasion.
- Chloride free.
- Reduced shrinkage & creep.
- Suitable for hot climates.
- Improved water borne salt resistance.

PROPERTIES

Appearance: Brown liquid

Chemical: Napthalene Formaldehyde Sulphonate

Specific Gravity: 1.19 - 1.21 approx. at 20°C

pH Value: 5.5 - 7.0

Chloride Content: Nil

Compatibility with Cements:

Cormix SP1B can be used with all types of Portland Cement and pozzolanic materials.

Cormix SP1B is compatible with P.F.A., G.G.B.F.S. and Silica fume. For use with special cements we recommend that you consult Cormix International Ltd.

Compatibility with Other Admixtures:

Cormix SP1B should not be premixed with other admixtures. Consult Cormix when using other admixtures.

METHOD OF USE / APPLICATION

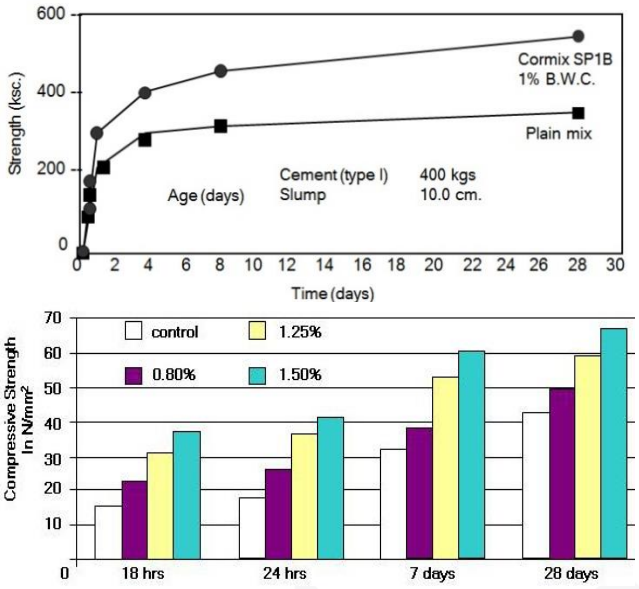
Cormix SP1B is supplied ready for use, it should be added to concrete mixes during the mixing process at the same time as the water or the aggregates. It should not be added directly to the cement.

DOSAGE

0.5 - 3.0 litre per 100 kg of total cementitious material. The exact dosage rates should be determined by trial mixes.

TYPICAL STRENGTH DEVELOPMENTS USING CORMIX SP1B

Cormix SP1B use to achieve High Early Strength Concrete Temp. 30°C



Typical strength development with different dosages of **Cormix SP1B** cement content 360 kg/m^2

W/C ratio varies to keep same slump (control : 0.40)

EFFECTS OF OVER-DOSING

Over-dosing of **Cormix SP1B** will generally produce a considerable increase in workability. Providing over dosed concrete is properly cured the ultimate strength will generally be higher than of a normal concrete.

PACKAGING

Cormix SP1B is supplied in 200 litre steel drums.

Alternatively bulk deliveries can be arranged.

Cormix ® SP1B

HIGH RANGE WATER REDUCING SUPERPLASTICISER

STORAGE & SHELF LIFE

Cormix SP1B should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out, to restore it to its normal state.
Cormix SP1B can also be stored under high, ambient temperatures, without any adverse effect on its performance. The shelf life is at least 12 months when stored in original unopened containers.

HEALTH & SAFETY

Cormix SP1B is formulated from chemicals which present no fire or health hazards.
Do not take internally. If on skin wash off with soap and water. If in eyes wash out with copious amounts of water and seek medical attention.
For further information consult Cormix International.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Cormix ® SP4

HIGH RANGE WATER REDUCING AND SET RETARDING CONCRETE ADMIXTURE

DESCRIPTION

Cormix SP4 is a versatile product specifically designed for producing free flowing concrete in hot climates. A substantial water reducing agent for promoting early and ultimate strengths. It is based on the soluble salt of polymeric sulphonate and retardant and is a powerful deflocculant.

Depending on the addition rate **Cormix SP4** conforms to Type A, D and G materials of ASTM designation C494 and BSEN 934-2 1998.

USES & ADVANTAGES

Cormix SP4 may be used in concrete tunnel linings, dams, power plants, highways, ports, and other large projects where high performance concrete is required.

Advantages include:

- Economical product for RMC companies.
- Flowable concrete for congested and large pours.
- Extension of workability.
- Improved impermeability and durability of concrete.
- Up to 25% water reduction.
- No excessive air entrainment or bleeding.
- Better surface finish.
- No adverse shrinkage.
- Increased early and ultimate strengths.
- Cement economies.
- **Cormix SP4** produces superplasticised concrete by direct addition at high dosage levels. The increase in workability is such that the concrete becomes self-compacting and limited vibration is required to achieve dense, void-free concrete.
- Incorporation of **Cormix SP4** into concrete aids cohesion, especially when harsh mixes are used.

This is a function of the slight air-entrainment properties of the product, which is characteristic of lignosulphonic acid derivatives. Slight air entrainment also improves the surface finish of the concrete.

PROPERTIES

Appearance:	Dark brown liquid
Specific Gravity:	1.17 - 1.19
pH Value:	5.0 - 7.0
Chloride Content:	Nil

Compatibility with Cements:

Cormix SP4 can be used with all types of Portland Cement and pozzolanic materials. For use with special cements we recommend that you consult Cormix.

Cormix SP4 is compatible with P.F.A., G.G.B.F.S., and Silica Fume.

Compatibility with Other Admixtures:

Cormix SP4 should not be premixed with other admixtures. Consult Cormix when using other admixtures.

METHOD OF USE / APPLICATION

Cormix SP4 is supplied ready for use, it should be added to concrete mixes during the mixing process at the same time as the water or the aggregates. It should not be added directly to the cement.

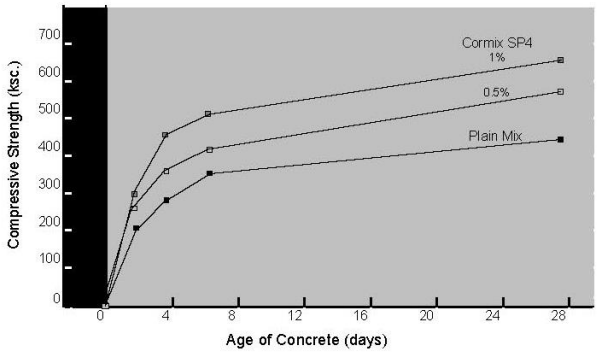
DOSAGE

0.5 - 2.0 litre per 100 kg of total cementitious material.

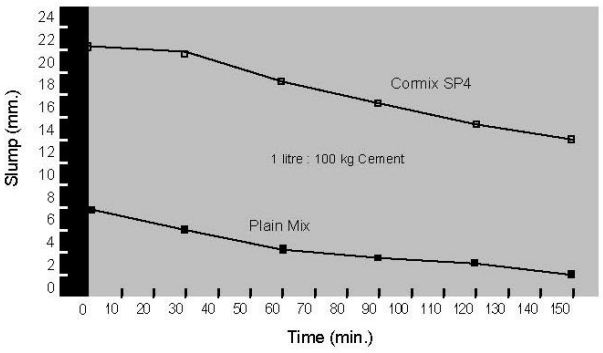
Exact dosage rates should be determined by trial mixes.

TYPICAL RESULT USING CORMIX SP4

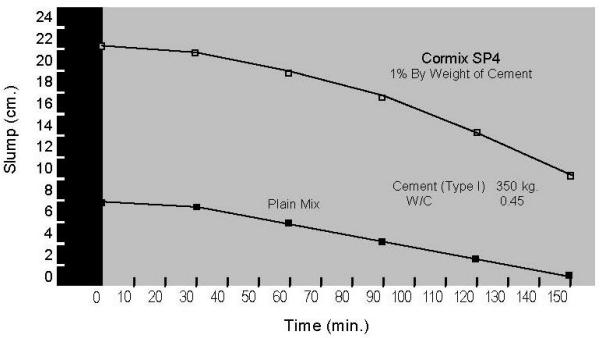
Early Strength
Temp. 30°C



Improved Workability & Slump Retention
Same W/C = 0.48 Temp. 30°C



Superplasticising Effect & Slump Retention
Same W/C = 0.45 Temp. 30°C



Cormix ® SP4

HIGH RANGE WATER REDUCING AND SET RETARDING CONCRETE ADMIXTURE

EFFECTS OF OVER-DOSING

Over-dosing of **Cormix SP4** will generally produce a considerable increase in workability, and in certain circumstances a slight increase in air-entrainment. Providing over dosed concrete is properly cured the ultimate strength will generally be higher than that of a normal concrete.

The effects of over-dosing are increased when sulphate resisting cement (Type V) is used in the concrete mix, because of the chemical nature of the cement compared to that of ordinary Portland Cement (Type I).

PACKAGING

Cormix SP4 is supplied in 200 litre steel drums.

Alternatively bulk deliveries can be arranged.

STORAGE & SHELF LIFE

Cormix SP4 should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out, to restore it to its normal state.

Cormix SP4 can also be stored under high, ambient temperatures, without any adverse effect on its performance. The shelf life is a minimum of 12 months when unopened.

HEALTH & SAFETY

Cormix SP4 is formulated from chemicals which present no fire or health hazards.
Do not take internally. If on skin wash off with soap and water. If in eyes wash out with copious amounts of water and seek medical attention.
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CORMIX
One step ahead

(7.2)

Shotcrete Admixtures

Cormix ® SF1

HIGH PERFORMANCE DRY SILICA FUME CONCRETE ADMIXTURE

DESCRIPTION

Cormix SF1 silica fume is an ultrafine spherical, high performance super reactive pozzolanic mineral additive conforming to ASTM C1240 definitions. Composed mostly of silica it is processed from a biproduct and is environmentally friendly.
Due to its excellent pozzolanic properties **Cormix SF1** can be used to enhance both the wet and hardened state properties of concrete. **Cormix SF1** reacts with Calcium hydroxide a biproduct of the cement hydration process which is weak and soluble. This reaction leads to the formation of Calcium silicate hydrate gel (CSH). The content of weak Calcium hydroxide is decreased and the content of CSH increased which gives strength & durability to concrete. The fine particle size of **Cormix SF1** allows it to fill the cement paste matrix thus densifying the concrete resulting in high strength and significant reductions in permeability.

USES & ADVANTAGES

Cormix SF1 is used to increase the density, water tightness, durability and compressive strength of concrete.
High performance concrete is produced with the addition of **Cormix SF1** providing the following advantages:-

- Waterproofs concrete. Reduced water permeability.
- Increased chemical resistance.
- Greatly improved resistance to carbonation.
- Improved durability and abrasion resistance.
- Reduces markedly infiltration of chlorides.
- Very high early and ultimate strengths.
- Reduced bleeding.
- Excellent freeze thaw resistance.
- Reduced rebound in shotcrete.
- Very low chloride ion permeability.
- Improved resistance to sulphates and acidic environments.
- Greater resistance to alkali aggregate reactions.

APPLICATIONS

Applications for **Cormix SF1** include but are not limited to:-

- Marine environment structures.
- Coastal structures.
- Underground structures in aggressive environments.
- Airports.
- High Rise Buildings.
- Waste water treatment plants.
- Bridges, subways, tunnels.
- High abrasion environments.
- Shotcrete.
- Agricultural product processing plants.

Cormix SF1 is supplied in 20 or 25 kg bags and be directly placed into truck mixers or concrete mixers. Bulk bags allow for the material to be conveyed to mixers via standard methods. Slurried SF1 is available in some countries. Concrete containing **Cormix SF1** should be placed and worked like any normal concrete. The concrete may appear "stickier" but can be easily moved by vibration.
Proper curing must take place immediately after concreting due to limited bleed water. For advice on mix design and application of **Cormix SF1** consult Cormix International Technical Department.

PROPERTIES

Appearance:	Grey/Black powder
Composition:	Silica fume
Typical Mean Composition:	SiO2 >90%
Density:	Undensified 200-350 kg/m^3
	Densified 500-700 kg/m^3
Toxicity:	Non toxic

STANDARD

All Cormix products meet International standards.
Cormix SF1 conforms to the requirements of the various standards set by the following :-

- Canadian Standards Association.
- America Society for Testing Materials.
- European Committee for Standardisation.

Cormix SF1 meets the mandatory requirements of the standards as shown below.

Mandatory chemical & physical requirements	CAN/ CSA A23.5-98		ASTM C1240-03		prEN 13263	
	Spec.	Frequency	Spec.	Frequency	Spec.	Frequency
SiO^2 (%)	> 85	500 MT	> 85	400 MT	> 85	weekly
SO^3 (%)	< 1.0	1000 MT			< 2.0	weekly
Cl (%)					< 0.3	weekly
Free CaO (%)					< 1.0	weekly
Free Si (%)					< 0.4	monthly
Alkalies (as equivalent Na_2O, %)			Report	400 MT		
Moisture (%)			< 3.0	400 MT	< 4.0	weekly
Loss on ignition, LOI (%)	< 6.0	500 MT	< 6.0	400 MT	>15 & <35	Monthly
Specific surface (BET - m^2/ gram)			> 15	3200 MT/ 3 months		
Bulk density (kg/ m^3) - undensified			Report	400 MT		
Pozz. Activity Index (%) - 7 days accelerated curing			> 105	3200 MT/ 3 months		
Pozz. Activity Index (%) - 28 days normal curing					> 100	monthly
Retained on 45 micron sieve (%)	< 10	100 MT	< 10	400 MT		
Variation from avg. retained on 45 micron (%-points)			< 5	avg. of last 10 tests		
Density (kg/ m^3)			Report	400 MT		
Autoclave expansion or contraction (%)	< 0.2	1000 MT				
Foaming	No foam	1000 MT				

* Accepts no liability for any direct or indirect damage from its use.

Cormix ® SF1

HIGH PERFORMANCE DRY SILICA FUME CONCRETE ADMIXTURE

CLEANING

Clean all tools immediately after use with water.

DOSAGE

Between 2-15% by weight of cement. The dosage is a percentage as dry weight by weight of cementitious material. Higher dosages may be used to achieve specific requirements Consult Cormix for the most appropiate dosage.

Application	Dosage level %
Normal Concrete	4-7
High Strength	7-10
Self-Compacting Concrete	4-10
Low Permeability	7-10
Underwater	12-15
Pumping Aid	2-3
Shotcrete	8-12

PACKAGING

20 / 25 kg paper bags or bulk bags weighting 1.1 MT. Special packaging is available on request. In some countries slurry form is available.

STORAGE

Keep dry in original sealed bags. The shelf life is up to 12 month in original packaging.

HEALTH & SAFETY

During use avoid inhalation of dust and contact with skin & eyes. Wear protective clothing. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately do NOT induce vomiting.

TECHNICAL SERVICE

The Cormix International Limited 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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc. Cormix does not take responsibility nor need to defend others testing that does not achieve the published data. The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Conair ®

AIR ENTRAINING CONCRETE ADMIXTURE

DESCRIPTION

Conair is a liquid air entraining agent for use in concrete and mortar mixes. It is used to improve the workability, cohesion, and durability of concrete and mortar by the entrainment of minute air bubbles of controlled size and spacing, uniformly distributed throughout the mix. **Conair** complies with ASTM C260-81 for air entraining admixtures. It provides freeze thaw protection in cold climates.

USES & ADVANTAGES

Conair is used to produce workable and durable concrete for dams and reservoirs, tunnels, mass concrete structures, roads, runways, taxiways etc.

Advantages include:-

- Improves permeability
- Improves workability.
- Improves durability.
- Cohesion of mixes is improved and bleeding reduced.
- Volume yield of concrete or mortar is increased.
- Harsh mixes are improved.
- Easy to use.
- Ready to use.
- Freeze thaw protection.

PROPERTIES

Appearance:	Light brown liquid
Specific Gravity:	Approx. 1.0 kg/ltr
Storage:	Free from frost in shade. Reseal after use.
pH Value:	8-10

DEPENSING/APPLICATION

Conair is added directly to the mixing water prior to its addition to the aggregates. **Conair** can be used with other admixtures providing these are added separately to the mix. Do not premix.

IMPORTANT NOTES

Overdosing will result in a high air content with resulting reductions in strength. To ensure consistent results air contents should be regularly monitored particularly if other materials are subject to variation.

DOSAGE

The dosage of **Conair** normally is in the range of 0.03 - 0.2 litre per 100 kg of total cementitious material, however, there is no standard dosage. The dosage level is not predictable because of varying materials and concrete mix designs.
Factors influencing air entrainment are: cement quality, sand grading, sand to aggregate ratio, slump, temperatures, cement replacements or pozzolanic materials such as PFA, GGBFS or silica fume.
Trial mixes may be started at 0.1% by weight of cement and the dosage adjusted depending on the results obtained under actual job conditions.
Mixes containing other plasticisers/retarders may require less air entrainer than plain mixes. Vary the dosage until the desired effect is achieved.

PACKAGING

25 litre plastic pails and 200 litre drums.

STORAGE & SHELF LIFE

Shelf life up to 12 months if stored in original unopened package in shaded conditions.

HEALTH & SAFETY

As with all chemical products care should be taken during use and storage to avoid contact with skin eyes and mouth.

If accidentally ingested immediately seek prompt medical attention, do not induce vomiting and give copious amounts of water to drink.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Rev.014 Aug 2021

Conair ®

AIR ENTRAINING CONCRETE ADMIXTURE

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Cormix ® AFL

ALKALI-FREE LIQUID HARDENING ACCELERATOR

DESCRIPTION

Cormix AFL is an alkali-free liquid admixture formulated to provide hardening acceleration in shotcrete, while reducing the safety hazards associated with traditional alkaline shotcrete accelerators. It may be used for shotcrete applied by dry or wet spraying. Complies of ASTM C1141, Type II & Grade 9, Class A.

USES & ADVANTAGES

Cormix AFL can be used with shotcrete in tunneling, mining, and slope stabilization. It is ideally suited for wet mix sprayed concrete for rock support due to:

- The quick setting properties which allow for rapid work progress and the ability to construct thick sprayed concrete linings via layered application during construction sequence.
- The product formulation which provides continual early-age strength development whilst also achieving excellent long-term strength and durability.
- **Cormix AFL** being a liquid product provides easy handling, as well as facilitating accurate addition to the concrete.
- Very low dust production and therefore a good working environment. Product is also non aggressive, it provides improved working safety and environmental impact.

Advantages include:

- Quick setting.
- Early-age strength development, excellent long-term strength and durability.
- High resistance to carbonation.
- Reducing water permeability.
- Very low dust production.
- Improves safety and non-toxic.
- Better adhesion.
- Reduced rebound.
- Alkali free.

PROPERTIES

Appearance:	Turbid / Opaque Liquid
pH Value:	≥ 2.5
Density:	Approx. 1.36-1.42 kg/ltr.
Na_2O:	<0.1%
Chloride Content (Cl-):	<0.01%

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

APPLICATION

According to the required setting time and early strengths, **Cormix AFL** can be added at a dosage of 3-10% by weight of binder. Overdosing may result in decreased strength.

The dosage depends on temperatures, reactivity of cement used, required thickness of layers, setting time and early strength development required. We recommend the use of fresh cement.

Dosage equipment and pumps must be made of acid-resistant materials.

Mono pumps (screw pumps) and squeeze pumps (rotary pumps) can work well, but piston pumps, pressure tanks and gear pumps should not be used.

It is preferable to use concrete with cement contents of no less than 400 kg/m^3 for high early strength.

Cormix AFL can be sensitive to different types of cement. It is suggested to use 100% clinker Portland cement for earlier setting time.

During wet-mix spraying, the w/c ratio should be below 0.5 (preferably below 0.45) to achieve better results. The water content in aggregate must be taken into account in the calculation of water-cement ratio.

Cormix AFL is added at the nozzle through a separate accelerator hose.

To facilitate dosage it is recommended to agitate **Cormix**

AFL before hand, as the material is self-thickening, or rather has a tendency to sedimentation after long term storage.

Before **Cormix AFL** is used, the entire dosing equipment must be thoroughly cleaned with a lot of water. During concreting and work breaks the system must remain closed to avoid blockage.

Cormix AFL must not be stored in steel containers. The storage containers must be closed tightly to avoid the evaporation of the water and resulting film formation on the surface.

Prior to and after using **Cormix AFL**, clean the hoses, pumps, and other instruments thoroughly with plenty of water.

Do not mix Cormix AFL with any type of accelerator produced by another manufacturer, as this could cause immediate clogging of pumps and hoses.

All necessary suitability tests must be performed before use.

GENERAL INFORMATION - SHOTCRETE MIX DESIGN

Typical Shotcrete Mix Design

Ordinary Portland Cement Type I	420 kg/m^3
River Sand	700 kg/m^3
Crushed Rock Fines	500 kg/m^3
Aggregates <10 mm	450 kg/m^3
Water	189 litre/m^3

The above is a typical shotcrete mix design excluding superplasticizers, silica fume, steel fibres, accelerator sand other additives.

Cormix ® AFL

ALKALI-FREE LIQUID HARDENING ACCELERATOR

Gradation Limits for Shotcrete Aggregate

Sieve Sizes (mm)	% by Weight Passing Individual Sieves Gradation No.1	No.2	No.3
19	-	-	100
12.5	-	100	80-95
9.5	100	90-100	70-90
4.75	95-100	70-85	50-70
2.36	80-100	50-70	35-55
1.18	50-85	35-55	20-40
0.60	25-60	20-35	10-30
0.30	10-30	8-20	5-17
0.15	2-10	2-10	2-10

Dry Mix

Dry mix shotcrete must allow for increased rebound composed mainly of larger aggregate, unlike wet mixes increase aggregate contents to allow for loss in application is not a problem. Below is a typical dry mix shotcrete mix design. In dry mix shotcrete usually the only type of admixtures used are accelerators combined with silica fume and steel fibres.

Sample Dry Mix (Design 1 m^3):

Aggregate (Gradation No.2)	1,670 kg
Cement	350-400 kg
Silica Fume (**Cormix SF1**)	50 kg
Steel Fibres (if required)	40-60 kg

Wet Mix

Wet mix design is similar to pumpable concrete mixes. The material must be flowable enough at low water cement ratios to flow through the hose stay in place once blown onto the surface and rapidly gain strength.

Wet mix shotcrete typically contains Superplasticisers (**Cormix SP1**), Retarders (**Cormix R1**), Air Entrainers (**Conair**), Silica Fume (**Cormix SF1**) and Steel Fibres.

Below is a typical wet mix shotcrete design:

Sample Wet Mix (Design 1 m^3)

Aggregate (Gradation No.2)	1,600 kg
Cement	420 kg
Silica Fume (**Cormix SF1**)	40 kg
Superplasticiser, Water Reducer (**Cormix SP1, Cormix R1**) & Air Entrainer (**Conair**)	5-10 kg
Water (approx.)	210 kg
Steel Fibres (if required)	40-60 kg

Cormix International technical service department is available to advise on shotcrete mix design and the appropriate additives to use.

Dry & Wet Shotcrete Additives Available from Cormix

Dry Mix Additives

Cormix AFP	Alkali Free Powder Accelerator
Cormix GA2	Standard Powder Accelerator
Cormix SF1	Silica Fume
Steel Fibres	

Wet Mix Additives

Cormix GA1	Standard Liquid Accelerator
Cormix AFL	Alkali Free Liquid Accelerator
Cormix SP1	Superplasticiser Admixture
Cormix R1/P4	Retarding & Plasticising Admixture
Cormix SF1	Silica Fume
Conair	Air entraining Additive
Steel Fibres	

PACKAGING

Cormix AFL is supplied in 200 litre open top plastic drums or 1,000 litre IBC tanks.

STORAGE & SHELF LIFE

Cormix AFL must be stored at a minimum of +15°C and maximum of +35°C. **Cormix AFL** has to be kept in closed containers made of plastic, glass fibre plastic or stainless steel. **Cormix AFL** must not be stored in normal steel containers as the pH can cause corrosion that may affect the performance of the product. Do not allow the product to freeze.

After prolonged storage we recommend that **Cormix AFL** always be fully agitated prior to use by mechanical stirring or re-circulation pumping. Agitation by compressed air is strictly not advised.

If stored in tightly closed original containers under the above given conditions, **Cormix AFL** has a shelf life of 3-6 months.

Open containers will allow prolonged contact with air leading to skin film and lumps being produced that may cause blocking of accelerator system.

It is recommended that your local Cormix International representative be consulted prior to the use of any product that has been frozen.

Performance testing should always be carried out before use.

HEALTH & SAFETY

Wear rubber gloves and goggles to avoid eye and skin contact. If contact occurs, clean with plenty of water. In case of eye contact, seek medical advice.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Cormix ® AFL RT1

ALKALI-FREE LIQUID HARDENING ACCELERATOR

DESCRIPTION

Cormix AFLRT1 is an alkali-free liquid admixture formulated to provide faster hardening acceleration in shotcrete, while reducing the safety hazards associated with traditional alkaline shotcrete accelerators. It may be used for shotcrete applied by dry or wet spraying. Complies of ASTM C1141, Type II & Grade 9, Class A.

USES & ADVANTAGES

Cormix AFLRT1 can be used with shotcrete in tunneling, mining, and slope stabilization. It is ideally suited for wet mix sprayed concrete for rock support.

Advantages include:

- Quick setting properties which allow for rapid work progress and the ability to construct thick sprayed concrete linings via layered application during construction sequence.
- Easy handling, as well as facilitating accurate addition to the concrete.
- Very low dust production and therefore a good working environment.
- Provides improved working safety and less environmental impact.
- Early-age strength development, excellent long-term strength and durability.
- High resistance to carbonation.
- Reduced water permeability.
- Better adhesion.
- Reduced rebound.
- Alkali free.

PROPERTIES

Appearance:	Clear Liquid
pH Value	$\geq$ 2.5
Density:	Approx. 1.30-1.35 kg/ltr.
Na_2O:	<0.1%
Chloride Content (Cl-):	<0.01%

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

Initial Setting Time:	< 3 minutes ASTM C1398
Final Setting Time:	$\leq$ 4 min 30 sec

APPLICATION

According to the required setting time and early strengths, Cormix AFLRT1 can be added at a dosage of 3-10% by weight of binder. Overdosing may result in decreased strength.

The dosage depends on temperatures, reactivity of cement used, required thickness of layers, setting time and early strength development required. The use of fresh cement is recommended.

Dosage equipment and pumps must be made of acid- resistant materials.

Mono pumps (screw pumps) and squeeze pumps (rotary pumps) can work well, but piston pumps, pressure tanks and gear pumps should not be used.

It is preferable to use concrete with cement contents of no less than 400 kg/m^3 for high early strength.

Cormix AFL RT1 can be sensitive to different types of cement. It is suggested to use 100% clinker Portland cement for earlier setting time.

During wet-mix spraying, the w/c ratio should be below 0.5 (preferably below 0.45) to achieve better results. The water content in aggregate must be taken into account in the calculation of water-cement ratio.

Cormix AFL RT1 is added at the nozzle through a separate accelerator hose.

Before **Cormix AFL RT1** is used, the entire dosing equipment must be thoroughly cleaned with a lot of water. During concreting and work breaks the system must remain closed to avoid blockage.

Cormix AFL RT1 must not be stored in steel containers. The storage containers must be closed tightly to avoid the evaporation of the water and resulting film formation on the surface.

Prior to and after using **Cormix AFL RT1**, clean the hoses, pumps, and other instruments thoroughly with plenty of water.

Do not mix Cormix AFL RT1 with any type of accelerator produced by another manufacturer, as this could cause immediate clogging of pumps and hoses.

All necessary suitability tests must be performed before use.

GENERAL INFORMATION - SHOTCRETE MIX DESIGN

Typical Shotcrete Mix Design

Ordinary Portland Cement Type I	420 kg/m^3
River Sand	700 kg/m^3
Crushed Rock Fines	500 kg/m^3
Aggregates <10 mm	450 kg/m^3
Water	189 litre/m^3

The above is a typical shotcrete mix design excluding superplasticisers, silica fume, steel fibres, accelerators and other additives.

Cormix ® AFL RT1

ALKALI-FREE LIQUID HARDENING ACCELERATOR

Gradation Limits for Shotcrete Aggregate

Sieve Sizes (mm)	% by Weight Passing Individual Sieves Gradation No.1	No.2	No.3
19	-	-	100
12.5	-	100	80-95
9.5	100	90-100	70-90
4.75	95-100	70-85	50-70
2.36	80-100	50-70	35-55
1.18	50-85	35-55	20-40
0.60	25-60	20-35	10-30
0.30	10-30	8-20	5-17
0.15	2-10	2-10	2-10

Dry Mix

Dry mix shotcrete must allow for increased rebound composed mainly of larger aggregate, unlike wet mixes increase aggregate contents to allow for loss in application is not a problem. Below is a typical dry mix shotcrete mix design. In dry mix shotcrete usually the only type of admixtures used are accelerators combined with silica fume and steel fibres.

Sample Dry Mix (Design 1 m^3):

Aggregate (Gradation No.2)	1,670 kg
Cement	350-400 kg
Silica Fume (**Cormix SF1**)	50 kg
Steel Fibres (if required)	40-60 kg

Wet Mix

Wet mix design is similiar to pumpable concrete mixes. The material must be flowable enough at low water cement ratios to flow through the hose stay in place once blown onto the surface and rapidly gain strength. Wet mix shotcrete typically contains Superplasticisers (**Cormix SP1**), Air Entrainers (**Conair**), Silica Fume (**Cormix SF1**) and Steel Fibres.

Below is a typical wet mix shotcrete design:

Sample Wet Mix (Design 1 m^3)	
Aggregate (Gradation No.2)	1,600 kg
Cement	420 kg
Silica Fume (**Cormix SF1**)	40 kg
Superplasticiser, Water Reducer (**Cormix SP1, Cormix R1**) & Air Entrainer (Conair)	5-10 kg
Water (approx.)	210 kg
Steel Fibres (if required)	40-60 kg

Cormix International technical service department is available to advise on shotcrete mix design and the appropriate additives to use.

Dry & Wet Shotcrete Additives Available from Cormix

Dry Mix Additives

Cormix AFP	Alkali Free Powder Accelerator
Cormix SF1	Silica Fume

Wet Mix Additives

Cormix AFL RT1	Alkali Free Liquid Accelerator
Cormix SP1	Superplasticiser Admixture
Cormix SF1	Silica Fume
Conair	Air entraining Additive

PACKAGING

Cormix AFL RT1 is supplied in 200 litre drums or 1,000 litre IBC tanks.

STORAGE & SHELF LIFE

Cormix AFL RT1 must be stored at a minimum of +5°C and maximum of +35°C. **Cormix AFL RT1** has to be kept in closed containers made of plastic, glass fibre plastic or stainless steel. **Cormix AFL RT1** must not be stored in normal steel containers as the pH can cause corrosion that may affect the performance of the product.

After prolonged storage we recommend that **Cormix AFL RT1** always be fully agitated prior to use by mechanical stirring or re-circulation pumping. Agitation by compressed air is strictly not advised.

If stored in tightly closed original containers under the above given conditions, **Cormix AFL RT1** has a shelf life of 3-6 months.

Open containers will allow prolonged contact with air leading to skin film and lumps being produced that may cause blocking of accelerator system.

It is recommended that your local Cormix International representative be consulted prior to the use of any product that has been frozen.

Performance testing should always be carried out before use.

HEALTH & SAFETY

Wear rubber gloves and goggles to avoid eye and skin contact. If contact occurs, clean with plenty of water. In case of eye contact, seek medical advice.

TECHNICAL SERVICE

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Cormix ® AFL RT1

ALKALI-FREE LIQUID HARDENING ACCELERATOR

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CORMIX
One step ahead

(8)

Underground Construction Specialities

CORMIX
One step ahead

(8.1)

TBM Accessories

Cormix ® TBM TS1

TAIL SEALANT FOR SHIELDED TUNNEL BORING MACHINES (TBM)

DESCRIPTION

Cormix TBM TS1 is used with shielded tunnel boring machines it effectively seals the gap between the shield and precast concrete segments preventing the ingress of soil, water or grout.

It has been formulated to resist high ground and water pressures, has excellent pumping qualities and adheres to all types of surfaces.

Cormix TBM TS1 has been developed with a natural oil based formula to avoid any spoil contamination it is specifically developed for safe use in built up areas and elsewhere where ground water could be in contact with TBM excavation avoiding any pollution to the environment.

USES & ADVANTAGES

Use with shielded TBMs equipped with a brush seal system

Advantages include:-

- Excellent sealing properties and wash out resistance.
- Excellent adhesion to most substrates.
- Excellent pumping properties.
- Produced using natural oils environmentally friendly. Biodegradable.
- Economical compared to traditional formulas.
- Fire resistant.
- Good stability under varying temperatures & pressure.
- Good adhesion to concrete & steel.
- No harmful effects on sealing gaskets.
- Formulated to resist high pressures up to 10 bar

PROPERTIES

Colour:	Beige
Appearance:	Homogenous paste
SG/Density:	1.40 - 1.55 kg/ltr
Water spray off:	< 5 %
Thermal Decomposition:	> 180 °C
Volatility:	< 1 %
Flash Point:	> 200 °C
Water pressure resistance:	Up to 10 bar
Pass 1.0 mm Mesh	(No water Leakage)
Pass 0.5 mm Mesh	

CONSUMPTION

Typical consumption rates are 0.75kg -1.4kg/m^2 of segment outer surface area but may vary around this. Consumption will vary depending on many factors such as segment surface condition, segment alignment, curves, brush conditions, grouting pressures etc.

PACKAGING

70 kg and 250 kg steel drums packing may be adjusted to meet the needs of the job.

STORAGE & SHELF LIFE

Store in original unopened drums at between 5- 35°C. The shelf life is then 12 months.

HEALTH & SAFETY

Cormix TBM TS1 is an inert material and not hazardous .It is environmentally friendly and does not pose health hazards.
Normal precautions should be taken when handling the product such as the use of eye protection and gloves. Please refer to the MSDS

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

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Cormix ® TBM TS2

FIRST FILL TAIL SEALANT FOR SHIELDED TUNNEL BORING MACHINES (TBM)

DESCRIPTION

Cormix TBM TS2 is used with shielded tunnel boring machines it effectively seals the gap between the shield and precast concrete segments preventing the ingress of soil, water or grout.
Cormix TBM TS2 is used as a “first fill” sealant to resist water and ground pressures and not breakdown under high mechanical pressures.
After the initial “first fill” application, the use of pumpable grade such as **Cormix TBM TS1** sealant is required to ensure effective TBM tail shield protection.
It has been formulated to resist high ground and water pressures, has excellent sealing properties and adheres to all types of surfaces.
Cormix TBM TS2 has been developed with a natural oil based formula to avoid any spoil contamination it is specifically developed for safe use in built up areas and elsewhere where ground water could be in contact with TBM excavations avoiding any pollution to the environment.

USES & ADVANTAGES

Use with shielded TBMs equipped with a brush seal system

Advantages include:-

- Excellent sealing properties and wash out resistance.
- Excellent adhesion to most substrates.
- Excellent pumping properties.
- Produced using natural oils environmentally friendly. Biodegradable.
- Economical compared to traditional formulas.
- Fire resistant.
- Good stability under varying temperatures & pressure.
- Good adhesion to concrete & steel.
- No harmful effects on sealing gaskets.
- Formulated to resist high pressures.

PROPERTIES

Colour:	Light grey
Appearance:	Homogenous paste
SG/Density:	1.50 – 1.60 kg/ltr
Water spray off:	< 5 %
Thermal Decomposition:	> 180 °C
Volatility:	< 1 %
Flash Point:	> 200 °C
Water pressure resistance:	8 bar
Pass 1.0 mm Mesh	> 5 minutes
Pass 0.5 mm Mesh	> 5 minutes

CONSUMPTION

The approx. consumption to fill a 3 row brush system is 45-50 kg per metre shield circumference.
Consumption will vary depending on many factors such as segment surface condition, segment alignment, curves, brush conditions, grouting pressures etc.

PACKAGING

20 and 250 kg steel drums packing may be adjusted to meet the needs of the job.

STORAGE & SHELF LIFE

Store in original unopened drums at between 5- 35°C. The shelf life is then 12 months.

HEALTH & SAFETY

Cormix TBM TS2 is an inert material and not hazardous .It is environmentally friendly and does not pose health hazards.
Normal precautions should be taken when handling the product such as the use of eye protection and gloves. Please refer to the MSDS

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Cormix ® TBM P3

A SOIL CONDITIONING LIQUID POLYMER FOR USE WITH TUNNEL BORING MACHINES

DESCRIPTION

Cormix TBM P3 is a liquid lubricating polymer used to enhance the performance of **Cormix SCF Series** in difficult ground conditions with EPB tunneling methods. It is also used for example in conditions of soil with sand, silt or clay with very high-water contents.

USES & ADVANTAGES

Cormix TBM P3 is used directly in soil conditions with no clay, fine sand & very high-water permeability. **Cormix TBM P3** has been developed for use with shielded TBM excavation. It is also used in ground containing fine sand, silts or clay in conjunction with **Cormix SCF Series** or on its own when the water content increases in soil & foam alone is unable to modify the soil conditions.

Advantages include:-

- Easy to use with soil having high water contents.
- Reduced soil permeability.
- Increased cohesion and smoothed soil extraction.
- Reduced friction and abrasion at cutter head.
- Improved face stability.
- Environmentally friendly.
- Helps formation of the plug when injected directly to the screw conveyor.

PROPERTIES

Form :	Liquid
Colour :	Off-white
Density :	1.075-1.095 kg/litre
pH :	5.0-7.5
Solubility :	Totally soluble in water

APPLICATION

Cormix TBM P3 can be added to the foam solution either before or during foam creation or afterwards before injection to the cutter head or working chamber. Additionally it may be used on its own & injected with water directly to the working chamber or screw conveyor.

DOSAGE

0.05 – 0.5% solution for normal soil conditions.
1 – 2 % solution for soil with very high-water contents.
0.1 – 0.3% of foam solution when use with **Cormix SCF Series**.
Other dosage levels may be required depending on conditions.
The FER & FIRs will vary according to ground conditions. Laboratory trials are recommended at Cormix laboratories to determine the best dosage rate, the product may be modified to match the soils conditions.

PACKAGING

200 kg in plastic drums.

STORAGE & SHELF LIFE

Store **Cormix TBM P3** between 5ºC - 35ºC. The shelf life when stored sealed in the original packaging is 12 months.

Do not freeze.

HEALTH & SAFETY

Use standard precautions for handling chemical products.

Avoid eye & skin contact wear rubber gloves & goggles. If skin contact occurs rinse off with water in case of eye contact seek medical advice.

For further information refer to Cormix MSDS.

TECHNICAL SERVICE

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Cormix ® SCF

SOIL CONDITIONING FOAM FOR TUNNEL BORING MACHINES

DESCRIPTION

Cormix SCF is a liquid foaming agent produced especially for soil conditioning with shielded tunnel boring machines. EPB tunneling methods requires the use of soil conditioners. Cormix provides a range of foams and polymers to provide solutions for difficult geological situations.

USES & ADVANTAGES

Cormix SCF is used in soft ground tunnelling with tunnel boring machines. **Cormix SCF** can be modified to match the properties of the soil to be excavated, trials are recommended at Cormix Laboratories to determine the most effective foam type.

Advantages include:-

- Improved soil behavior.
- Environmentally friendly.
- Easier mucking.
- Can be modified for various conditions including for hard rock tunnelling dust suppression.
- Reduced permeability & improved sealing at the face.
- Can reduce stickiness of soils reducing blockages.
- Dust suppression in mining & hard rock tunnelling.
- The soils properties are made more plastic giving more even and controlled support & better stability at the face.
- Reduces friction heat buildup & abrasion to the cutter head, screw conveyor & conveyor reducing wear costs and power consumption.
- Maintenance of pressure.

PROPERTIES

Form :	Liquid
Colour :	Transparent
Density :	1.010 ± 0.02 kg/ltr
pH :	6.5 - 7.5
Solubility :	Totally soluble in water

APPLICATION

Foam is made by dispersing air into a solution of **Cormix SCF**. It may be expanded with air to give a stable foam. The foam formula expansion & injection rate at the face, working chamber or screw conveyor will depend on the soils conditions. **Cormix SCF** is available in various grades to meet the challenges of different soil conditions.
The following are available and may be modified as needed : **Cormix SCF** for clay and sandy clay silts ,**Cormix SCF2** sand clay and silt , **Cormix SCF3** for sand, clay gravels, and sand gravels. These may be used in conjunction with **Cormix Polymer** range **Cormix TBM P3**. The foam type may be varied according to the soil conditions and may be used in conjunction with **Cormix TBM P3** polymer additives. The formulations available for EPBM are relative to the different soils with varying FIR. FIRs may vary form 20-80% Cormix foams are manufactured to deal with clay, sand clay silts, sands clay gravels and sand gravels as well as other combinations.

DOSAGE

The normal dosage level of **Cormix SCF** is between 2-6% by weight of water, foam may be strengthened or the soils properties modified by the addition of **Cormix TBM P3**.
The FER will be between 10-30 whilst the FIR may vary considerably between 10-80%.

PACKAGING

25 litre plastic pails or 200 litre plastic drums.

STORAGE & SHELF LIFE

Shelf life up to 9 months if stored in original unopened packaging in shaded conditions.

HEALTH & SAFETY

As with all chemical products care should be taken during use and storage to avoid contact with skin eyes and mouth. If accidentally ingested immediately seek prompt medical attention, do not induce vomiting and give copious amounts of water to drink.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Rev.004 Oct 2021

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Cormix ® SCF1

SOIL CONDITIONING FOAM FOR EPB TBM'S ENCOUNTERING CLAY & SANDY SILTY CLAY

DESCRIPTION

Cormix SCF1 is a liquid foaming agent formulated on biodegradable surfactants and highly effective polymers produced especially for soil conditioning with shielded tunnel boring machines. EPB tunneling methods requires the use of soil conditioners. Cormix provides a range of foams and polymers to provide solutions for difficult geological situations.

USES & ADVANTAGES

Cormix SCF1 is used in soft ground tunnelling with all varieties, makes and sizes of EPB TBM's. **Cormix SCF1** can be modified to match the properties of the soil to be excavated, trials are recommended at Cormix Laboratories to determine the most effective foam type.

Advantages include:-

- Produces a stable foam.
- Can be used in both basic & acid soils.
- Biodegradable.
- Improved soil behaviour with anti-settling characteristics.
- Environmentally friendly.
- Easier mucking prevents clay from clogging
- Can be modified for various conditions including use with hard rock tunnelling as an effective dust suppressant and abrasion reducer aiding the cutter disc life expectancy.
- Reduced permeability & improved sealing at the face.
- Can reduce stickiness of soils, reducing clogging.
- The soils properties are made more plastic giving more uniformed and controlled support for improved stability at the face.
- Reduces friction & abrasion to the cutter head, screw conveyor & conveyor reducing wear costs and power consumption.
- Maintenance of pressure.

PROPERTIES

Form :	Liquid
Colour :	Transparent
Density :	1.03 ± 0.03 kg/ltr
pH :	6.5 - 9.5
Solubility :	Totally soluble in water

If separation occurs mix vigorously.

APPLICATION

Foam is made by dispersing air into a solution of **Cormix SCF1**. It may be expanded with air to give a stable foam. The foam formula expansion & injection rate at the face, working chamber or screw conveyor will depend on the soils conditions. **Cormix SCF1** is available in various grades to meet the challenges of different soil conditions. The following are available and may be modified as needed : **Cormix SCF1** for clay and sandy clay silts, **Cormix SCF2** sand clay and silt , **Cormix SCF3** for sand, clay gravels, and sand gravels. These may be used in conjunction with **Cormix TBM P3**.

The foam type may be varied according to the soil conditions. The formulations available are relative to the different soils with varying FIR. FIRs may vary form 20-80%. Cormix foams are manufactured to deal with clay, sandy clay silts, sand clayey silts, sand clayey gravels and sandy gravels as well as other combinations.

DOSAGE

The normal dosage level of **Cormix SCF1** is between 1-3% by weight of water, foam may be strengthened or the soils properties modified by the addition of **Cormix TBM P3** The FER will be between 10-30 whilst the FIR may vary considerably between 10-80%. Dosage will vary depending on soil conditions.

PACKAGING

25 litre plastic pails, 200 litre plastic drums or 1000 litre plastic IBCs.

STORAGE & SHELF LIFE

Shelf life is up to 9 months if stored in original unopened packaging in shaded conditions. Protect from moisture at 5-40°C.

HEALTH & SAFETY

As with all chemical products care should be taken during use and storage to avoid contact with skin eyes and mouth. If accidentally ingested immediately seek prompt medical attention, do not induce vomiting and give copious amounts of water to drink.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Rev.001 Mar 2022

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Cormix ® SCF2

SOIL CONDITIONING FOAM FOR EPB TBM'S ENCOUTERING SAND, CLAY & SILT

DESCRIPTION

Cormix SCF2 is a liquid foaming agent formulated on biodegradable surfactants and highly effective polymers produced especially for soil conditioning with shielded tunnel boring machines. EPB tunneling methods requires the use of soil conditioners. Cormix provides a range of foams and polymers to provide solutions for difficult geological situations.

USES & ADVANTAGES

Cormix SCF2 is used in soft ground tunnelling with all varieties, makes & sizes of EPB TBM's. **Cormix SCF2** can be modified to match the properties of the soil to be excavated, trials are recommended at Cormix Laboratories to determine the most effective foam type.

Advantages include:-

- Produces a stable foam.
- Can be used in both basic & acid soils.
- Biodegradable.
- Improved soil behaviour. with lubricating Characteristics.
- Environmentally friendly.
- Easier mucking prevents clay from clogging.
- Can be modified for various conditions including use with hard rock tunnelling TBM's as an effective dust suppressant and abrasion reducer aiding the cutter disc life expectancy.
- Reduced permeability & improved sealing at the face.
- Can reduce stickiness of soils reducing clogging.
- The soils properties are made more plastic giving a more uniformed and controlled support for improved stability at the face
- Reduces friction & abrasion to the cutter head, screw conveyor & conveyor reducing wear costs and power consumption.
- Maintenance of pressure.

PROPERTIES

Form :	Liquid
Colour :	Transparent
Density :	1.030 ± 0.03 kg/ltr
pH :	6.0 - 9.0
Solubility :	Totally soluble in water

APPLICATION

Foam is made by dispersing air into a solution of **Cormix SCF2**. It may be expanded with air to give a stable foam. The foam formula expansion & injection rate at the face, working chamber or screw conveyor will depend on the soils conditions. **Cormix SCF2** is available in various grades to meet the challenges of different soil conditions.

The following are available and may be modified as needed : **Cormix SCF1** for clay and sandy clay silts ,**Cormix SCF2** sand clay and silt , **Cormix SCF3** for sand, clay gravels, and sand gravels. These may be used in conjunction with **Cormix TBM P3**.

The foam type may be varied according to the soil conditions. The formulations available are relative to the different soils with varying FIR. FIRs may vary form 20-80%. Cormix foams are manufactured to deal with clay, sandy clay silts, sand clayey silts, sand clayey gravels and sandy gravels as well as other combinations.

DOSAGE

The normal dosage level of **Cormix SCF2** is between 1-3% by weight of water, foam may be strengthened or the soils properties modified by the addition of **Cormix TBM P3**.

The FER will be between 10-30 whilst the FIR may vary considerably between 10-80%. Dosage will vary depending on soil conditions.

PACKAGING

25 litre plastic pails, 200 litre plastic drums or 1000 litre plastic IBCs.

STORAGE & SHELF LIFE

Shelf life is up to 9 months if stored in original unopened packaging in shaded conditions. Protect from moisture stored at 5-40ºC.

HEALTH & SAFETY

As with all chemical products care should be taken during use and storage to avoid contact with skin eyes and mouth. If accidentally ingested immediately seek prompt medical attention, do not induce vomiting and give copious amounts of water to drink.

TECHNICAL SERVICE

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Rev.001 Mar 2022

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Cormix ® SCF3

SOIL CONDITIONING FOAM FOR EPB TBM'S ENCOUTERING SILTY GRAVEL & SAND

DESCRIPTION

Cormix SCF3 is a liquid foaming agent formulated on biodegradable surfactants and highly effective polymers produced especially for soil conditioning with shielded tunnel boring machines. EPB tunneling methods requires the use of soil conditioners. Cormix provides a range of foams and polymers to provide solutions for difficult geological situations.

USES & ADVANTAGES

Cormix SCF3 is used in soft ground tunnelling with all varieties, makes and sizes of EBP TBM's. **Cormix SCF3** can be modified to match the properties of the soil to be excavated, trials are recommended at Cormix Laboratories to determine the most effective foam type.

Advantages include:-

- Produces a stable foam.
- Can be used in both basic & acid soils.
- Biodegradable.
- Improved soil behaviour with anti-settling and lubricating characteristics.
- Environmentally friendly.
- Easier mucking by reducing the water thus improving the homogeneity of the spoils.
- Reduced permeability & improved sealing at the face.
- The soils properties are made more homogeneous giving more uniformed and controlled support for improved stability at the face.
- Reduces friction & abrasion to the cutter tools, screw conveyor & conveyor reducing wear costs and power consumption.
- Maintenance of pressure.

PROPERTIES

Form :	Liquid
Colour :	Transparent
Density :	1.035 ± 0.03 kg/ltr
pH :	6.5 - 9.5
Solubility :	Totally soluble in water

APPLICATION

Foam is made by dispersing air into a solution of **Cormix SCF3**. It may be expanded with air to give a stable foam. The foam formula expansion & injection rate at the face, working chamber or screw conveyor will depend on the soils conditions. **Cormix SCF3** is available in various grades to meet the challenges of different soil conditions.

The following are available and may be modified as needed : **Cormix SCF1** for clay and sandy clay silts ,**Cormix SCF2** sand clay and silt , **Cormix SCF3** for sand, clay gravels, and sand gravels. These may be used in conjunction with **Cormix TBM P3.**

The foam type may be varied according to the soil conditions. The formulations available are relative to the different soils with varying FIR. FIRs may vary form 20-80%. Cormix foams are manufactured to deal with clay, sandy clay silts, sand clayey silts, sand clayey gravels and sandy gravels as well as other combinations.

DOSAGE

The normal dosage level of **Cormix SCF3** is between 1-3% by weight of water, foam may be strengthened or the soils properties modified by the addition of **Cormix TBM P3**.

The FER will be between 10-30 whilst the FIR may vary considerably between 10-80%. Dosage will vary depending on soil conditions.

PACKAGING

25 litre plastic pails, 200 litre plastic drums or 1000 litre plastic IBCs.

STORAGE & SHELF LIFE

Shelf life is up to 9 months if stored in original unopened packaging in shaded conditions. Protect from moisture stored at 5-40ºC.

HEALTH & SAFETY

As with all chemical products care should be taken during use and storage to avoid contact with skin eyes and mouth. If accidentally ingested immediately seek prompt medical attention, do not induce vomiting and give copious amounts of water to drink.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Cormix does not take responsibility nor need to defend others testing that does not achieve the published data. The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.

Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Rev.001 Mar 2022

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Cormix ® P20

WATER REDUCING PLASTICISING AND RETARDING CONCRETE ADMIXTURE

DESCRIPTION

Cormix P20 is a ready to use set retarding & water reducing stabilizer used to control setting times of concrete or cement based grouts by varying the dosage as necessary. Concrete or grouts containing **Cormix P20** will have setting times significantly longer than those containing normal water reducing & retarding admixtures.

Cormix P20 allows for significant delays in concreting or grouting, and can be used in mass concreting in for example, marine structures and dams, or for the stabilising of grout when tunneling.

USES & ADVANTAGES

Cormix P20 can be used in large continuous pours, where cold joints are anticipated in joint areas in under water concreting, for hot weather concreting and in tunnel grouting.

Advantages include:-

- Controls setting time via dosage variation.
- Water reductions.
- Higher ultimate strengths.
- Improved water tightness.
- Improved durability.
- Reduced temperatures of concrete.
- Stabilizes mixes in tunnel lining.

PROPERTIES

Appearance:	Brown liquid
Specific Gravity:	1.09 - 1.11
Air Entrainment:	1 - 2%
Chloride Content:	Nil

Chemical Composition :

Blend of modified lignosulphonates and hydro-xycarboxic acid.

Compatibility with Cements:

Cormix P20 can be used with all types of Portland Cement. For use with special cements we recommend that you consult Cormix International.

Compatibility with Other Admixtures:

Cormix P20 should not be premixed with other admixtures. The performance of the material may be affected by the presence of other chemicals and we would recommend that Cormix International Ltd. Be consulted in such circumstances.

DOSAGE RATE

The performance of **Cormix P20** is best assessed after preliminary tests on site using the actual concrete under consideration to determine the optimum dosage and effect on properties such as compressive strength, setting times, shrinkage etc. when these are of consequence.

As a guide to these trials, an addition rate of 0.25-2% by weight of cement, is recommended. This rate of addition can be varied to give different results. For advice and assistance with your trials we would recommend that you consult Cormix International.

EFFECTS OF OVER-DOSING

Over-dosing of **Cormix P20** will cause an extension of initial setting time. If this happens consult Cormix International.

If intentional or accidental increases above the recommended addition rate are employed, care must be taken to allow for the effect on the stripping of formwork. In such cases, however, provided the concrete is properly cured, the ultimate strength will generally by higher than for normal concrete.

PACKAGING

Cormix P20 is supplied in 25 & 200 litre drums. Alternatively bulk deliveries can be arranged.

STORAGE & SHELF LIFE

Cormix P20 should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out, to restore it to its normal state. In original unopened drums shelf-life is 12 months.

HEALTH & SAFETY

Cormix P20 is formulated from chemicals that present no fire or health hazards.

For further information consult Cormix International Ltd.

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.

Rev.007 Feb 2023

Cormix ® P20

WATER REDUCING PLASTICISING AND RETARDING CONCRETE ADMIXTURE

QUALITY ASSURANCE

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Cormix ® LA1

LIQUID ACCELERATOR FOR BACKFILL GROUT

DESCRIPTION

Cormix LA1 is a liquid accelerator used for cementitious grouting in tunnels driven by TBMs.

USES & ADVANTAGES

Cormix LA1 is suitable for use in tunnel grouting applications where an early strength is required for the backfill grout after a few hours. It is used with Tunnel Boring Machines and used for primary tail shield grouting or secondary grouting through segmental lining. The main advantages of **Cormix LA1** is that the grouts gelling time is speeded up and early strengths are achieved within 1-2 hours.

PROPERTIES

Appearance:	Clear liquid
Specific Gravity:	Approx. 1.30-1.43 at 25ºC
Air Entrainment:	Nil
Chloride Content:	Nil

Compatibility with Cements:
Cormix LA1 can be used with all types of Portland Cements
Compatibility with Other Admixtures:
Cormix LA1 should not be premixed with other admixtures. The performance of the material may be affected by the presence of other chemicals. **Cormix International Limited** should be consulted in such circumstances.

MIXING

Cormix LA1 should be introduced into the grout mix at or near the nozzle of the grout line.

DOSAGE

The performance of **Cormix LA1** is best assessed by preliminary trials on site. The dosage can be varied to achieve the required gel time, early & final strength. The gel time is dependent upon the grout mix & dosage of **Cormix LA1.**

Note: The reaction involved is temperature dependent and will proceed more slowly in cold ambient conditions. Fresh cement reacts more quickly than old cement.

PACKAGING

Cormix LA1 is supplied in 200 litre drums.

STORAGE & SHELF LIFE

Cormix LA1 should preferably be stored inside, away from moisture contact and protected from frost. In original unopened drums shelf life is 12 months.

HEALTH & SAFETY

Caution: Cormix LA1 is caustic. Avoid contact with the skin, eyes and clothing. In all cases of contact, wash thoroughly with water. Immediate medical attention must be sought for all cases of ingestion or eye contact. Gloves, mask, goggles and protective clothing should be worn when handling or using **Cormix LA1**.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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CORMIX
One step ahead

(8.2)

Hard Rock Tunneling
(Shotcrete & Fixing)

Cormix ® AFL RT1

ALKALI-FREE LIQUID HARDENING ACCELERATOR

DESCRIPTION

Cormix AFLRT1 is an alkali-free liquid admixture formulated to provide faster hardening acceleration in shotcrete, while reducing the safety hazards associated with traditional alkaline shotcrete accelerators. It may be used for shotcrete applied by dry or wet spraying. Complies of ASTM C1141, Type II & Grade 9, Class A.

USES & ADVANTAGES

Cormix AFLRT1 can be used with shotcrete in tunneling, mining, and slope stabilization. It is ideally suited for wet mix sprayed concrete for rock support.

Advantages include:

- Quick setting properties which allow for rapid work progress and the ability to construct thick sprayed concrete linings via layered application during construction sequence.
- Easy handling, as well as facilitating accurate addition to the concrete.
- Very low dust production and therefore a good working environment.
- Provides improved working safety and less environmental impact.
- Early-age strength development, excellent long-term strength and durability.
- High resistance to carbonation.
- Reduced water permeability.
- Better adhesion.
- Reduced rebound.
- Alkali free.

PROPERTIES

Appearance:	Clear Liquid
pH Value	$\geq$ 2.5
Density:	Approx. 1.30-1.35 kg/ltr.
Na_2O:	<0.1%
Chloride Content (Cl-):	<0.01%

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

Initial Setting Time:	< 3 minutes ASTM C1398
Final Setting Time:	$\leq$ 4 min 30 sec

APPLICATION

According to the required setting time and early strengths, Cormix AFLRT1 can be added at a dosage of 3-10% by weight of binder. Overdosing may result in decreased strength.

The dosage depends on temperatures, reactivity of cement used, required thickness of layers, setting time and early strength development required. The use of fresh cement is recommended.

Dosage equipment and pumps must be made of acid- resistant materials.

Mono pumps (screw pumps) and squeeze pumps (rotary pumps) can work well, but piston pumps, pressure tanks and gear pumps should not be used.

It is preferable to use concrete with cement contents of no less than 400 kg/m^3 for high early strength.

Cormix AFL RT1 can be sensitive to different types of cement. It is suggested to use 100% clinker Portland cement for earlier setting time.

During wet-mix spraying, the w/c ratio should be below 0.5 (preferably below 0.45) to achieve better results. The water content in aggregate must be taken into account in the calculation of water-cement ratio.

Cormix AFL RT1 is added at the nozzle through a separate accelerator hose.

Before **Cormix AFL RT1** is used, the entire dosing equipment must be thoroughly cleaned with a lot of water. During concreting and work breaks the system must remain closed to avoid blockage.

Cormix AFL RT1 must not be stored in steel containers. The storage containers must be closed tightly to avoid the evaporation of the water and resulting film formation on the surface.

Prior to and after using **Cormix AFL RT1**, clean the hoses, pumps, and other instruments thoroughly with plenty of water.

Do not mix Cormix AFL RT1 with any type of accelerator produced by another manufacturer, as this could cause immediate clogging of pumps and hoses.

All necessary suitability tests must be performed before use.

GENERAL INFORMATION - SHOTCRETE MIX DESIGN

Typical Shotcrete Mix Design

Ordinary Portland Cement Type I	420 kg/m^3
River Sand	700 kg/m^3
Crushed Rock Fines	500 kg/m^3
Aggregates <10 mm	450 kg/m^3
Water	189 litre/m^3

The above is a typical shotcrete mix design excluding superplasticisers, silica fume, steel fibres, accelerators and other additives.

Cormix ® AFL RT1

ALKALI-FREE LIQUID HARDENING ACCELERATOR

Gradation Limits for Shotcrete Aggregate

Sieve Sizes (mm)	% by Weight Passing Individual Sieves Gradation No.1	No.2	No.3
19	-	-	100
12.5	-	100	80-95
9.5	100	90-100	70-90
4.75	95-100	70-85	50-70
2.36	80-100	50-70	35-55
1.18	50-85	35-55	20-40
0.60	25-60	20-35	10-30
0.30	10-30	8-20	5-17
0.15	2-10	2-10	2-10

Dry Mix

Dry mix shotcrete must allow for increased rebound composed mainly of larger aggregate, unlike wet mixes increase aggregate contents to allow for loss in application is not a problem. Below is a typical dry mix shotcrete mix design. In dry mix shotcrete usually the only type of admixtures used are accelerators combined with silica fume and steel fibres.

Sample Dry Mix (Design 1 m^3):

Aggregate (Gradation No.2)	1,670 kg
Cement	350-400 kg
Silica Fume (**Cormix SF1**)	50 kg
Steel Fibres (if required)	40-60 kg

Wet Mix

Wet mix design is similiar to pumpable concrete mixes. The material must be flowable enough at low water cement ratios to flow through the hose stay in place once blown onto the surface and rapidly gain strength. Wet mix shotcrete typically contains Superplasticisers (**Cormix SP1**), Air Entrainers (**Conair**), Silica Fume (**Cormix SF1**) and Steel Fibres.

Below is a typical wet mix shotcrete design:

Sample Wet Mix (Design 1 m^3)	
Aggregate (Gradation No.2)	1,600 kg
Cement	420 kg
Silica Fume (**Cormix SF1**)	40 kg
Superplasticiser, Water Reducer (**Cormix SP1, Cormix R1**) & Air Entrainer (Conair)	5-10 kg
Water (approx.)	210 kg
Steel Fibres (if required)	40-60 kg

Cormix International technical service department is available to advise on shotcrete mix design and the appropriate additives to use.

Dry & Wet Shotcrete Additives Available from Cormix

Dry Mix Additives

Cormix AFP	Alkali Free Powder Accelerator
Cormix SF1	Silica Fume

Wet Mix Additives

Cormix AFL RT1	Alkali Free Liquid Accelerator
Cormix SP1	Superplasticiser Admixture
Cormix SF1	Silica Fume
Conair	Air entraining Additive

PACKAGING

Cormix AFL RT1 is supplied in 200 litre drums or 1,000 litre IBC tanks.

STORAGE & SHELF LIFE

Cormix AFL RT1 must be stored at a minimum of +5°C and maximum of +35°C. **Cormix AFL RT1** has to be kept in closed containers made of plastic, glass fibre plastic or stainless steel. **Cormix AFL RT1** must not be stored in normal steel containers as the pH can cause corrosion that may affect the performance of the product.

After prolonged storage we recommend that **Cormix AFL RT1** always be fully agitated prior to use by mechanical stirring or re-circulation pumping. Agitation by compressed air is strictly not advised.

If stored in tightly closed original containers under the above given conditions, **Cormix AFL RT1** has a shelf life of 3-6 months.

Open containers will allow prolonged contact with air leading to skin film and lumps being produced that may cause blocking of accelerator system.

It is recommended that your local Cormix International representative be consulted prior to the use of any product that has been frozen.

Performance testing should always be carried out before use.

HEALTH & SAFETY

Wear rubber gloves and goggles to avoid eye and skin contact. If contact occurs, clean with plenty of water. In case of eye contact, seek medical advice.

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.

Cormix ® AFL RT1

ALKALI-FREE LIQUID HARDENING ACCELERATOR

QUALITY ASSURANCE

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DESCRIPTION

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USES & ADVANTAGES

Cormix LA1 is suitable for use in tunnel grouting applications where an early strength is required for the backfill grout after a few hours. It is used with Tunnel Boring Machines and used for primary tail shield grouting or secondary grouting through segmental lining. The main advantages of **Cormix LA1** is that the grouts gelling time is speeded up and early strengths are achieved within 1-2 hours.

PROPERTIES

Appearance:	Clear liquid
Specific Gravity:	Approx. 1.30-1.43 at 25ºC
Air Entrainment:	Nil
Chloride Content:	Nil

Compatibility with Cements:
Cormix LA1 can be used with all types of Portland Cements
Compatibility with Other Admixtures:
Cormix LA1 should not be premixed with other admixtures. The performance of the material may be affected by the presence of other chemicals. **Cormix International Limited** should be consulted in such circumstances.

MIXING

Cormix LA1 should be introduced into the grout mix at or near the nozzle of the grout line.

DOSAGE

The performance of **Cormix LA1** is best assessed by preliminary trials on site. The dosage can be varied to achieve the required gel time, early & final strength. The gel time is dependent upon the grout mix & dosage of **Cormix LA1.**

Note: The reaction involved is temperature dependent and will proceed more slowly in cold ambient conditions. Fresh cement reacts more quickly than old cement.

PACKAGING

Cormix LA1 is supplied in 200 litre drums.

STORAGE & SHELF LIFE

Cormix LA1 should preferably be stored inside, away from moisture contact and protected from frost. In original unopened drums shelf life is 12 months.

HEALTH & SAFETY

Caution: Cormix LA1 is caustic. Avoid contact with the skin, eyes and clothing. In all cases of contact, wash thoroughly with water. Immediate medical attention must be sought for all cases of ingestion or eye contact. Gloves, mask, goggles and protective clothing should be worn when handling or using **Cormix LA1**.

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Contite ® HPWM

WATERPROOFING MEMBRANE FOR UNDERGROUND STRUCTURES

DESCRIPTION

Contite HPWM is a single component high performance flexible waterproofing membrane based on EVA for the protection of various structures including tunnels, underground stations, shafts, caverns, etc.

Complies to EN1504 Part 9 and EN1504 Part 2
- Principle 1 : Protection Against Ingress (PI).
  Method 1.3 – Surface Coating.
  Method 1.8 – Application of Membranes.
- Principle 2 : Moisture Control. (MC)
  Method 2.3 – Surface Coating.
- Principle 8 : Increasing Resistivity (IR).
  Method 8.3 – Overlays or Coatings.

USES & ADVANTAGES

Contite HPWM may be applied to number of substrates and especially where sandwiched between two layers of structural concrete including:
- Basements
- Shotcrete tunnel and cavern linings
- Diaphragm wall and piles
- Mining.
- Water retaining structures

Advantages include:-
- Protecting concrete against aggressive ground waters.
- Very easy to install in big areas by spray especially to difficult surfaces.
- No fixing or anchoring required as spray applied
- No seams or joints.
- Very fast curing time from 2-3 hours depending on temperatures and humidity.
- Can be applied over concrete within 24 hours unlike other conventional waterproofers that require 28 days & dry surface.
- Excellent crack bridging properties and elongation.
- Connect to other waterproofing systems easily.
- No undercutting, easy to repair and difficult to damage.
- Fully bonded.
- Can overcoat within 24 hours. Excellent adhesion to concrete and steel.
- Hard wearing suitable for application over shotcrete containing steel fibres.
- Non flammable.
- Resistant to salt bearing ground waters.
- Chemical resistant.
- Life of material permanent when sandwiched between concrete linings.

Advantages over sheet membrane:-
- Easy to handle and apply over various complex shapes/areas without any problem.
- Rate of application is higher and quick as mentioned below :
  - Approx. 45 – 95 m^2/hr with the use of approx. 3 workers.
  - Approx. 160-170 m^2/hr with the use of robotic equipment and spray application.
- Spray application can be done continuously and consistently without the need to use any waterstops in between the section nor division of sections is required.
- Rock bolts/anchor bolts used in tunnels can be easily coated & protected from corrosion by spray application.

PROPERTIES

Appearance:	Light grey & orange powder (other colours available)
SG:	Approx.550-650 gm/litre
Application Thickness:	2-6 mm
Elongation: ASTM D412	≥150%
Waterproof Penetration: BS EN 12390-8:2000	Zero
Bond strength to Concrete: BS EN ISO 4624:2003/ASTM D4541	>1.5N/mm^2
Bond Strength to Steel: BS EN ISO 4624:2003/ASTM D4541	>2Nmm^2
Crack Bridging Ability:	>2.5 mm when applied at correct thickness BS EN 1062-7; 2004 Class A
Water Content:	35 to 55 % by weight
Non Flammable: BS EN ISO 13501-1 BS EN ISO 11925-2	Class E.
Chemical Resistance:	Complies with BSEN 14414 Method A
Resistance to Leaching:	Complies with BSEN 14415 Method A & B
Fire Resistance: BS EN ISO 11925-2	Non ignitable

Test results above are based on Laboratory conditions.

COVERAGE RATE

Approx. 1.2 kg – 3.6 kg /m^2 for 2 - 6 mm thickness. Apply in multiple layers up to a max of 2 mm per layer may build up to 6 mm.

SUBSTRATE PREPARATION

Ensure the surfaces to be coated are clean and sound, free from dust, laitance, curing compounds, grease, dirt, oil or other surface contaminants
Repair damaged surfaces or honey combed concrete with **Conpatch 600MCI** or other appropriate repair material from Cormix.
Surfaces should be damp, porous surfaces saturated before application, do not have running or standing water present.
In the case of cracks consult Cormix for treatment methodology.
Static cracks can be routed out and repaired with **Conpatch 600MCI** or **Contite Seal Mortar** Moving cracks should be treated via injection with **Contite PUE200/E201** polyurethane resin.
If water is running either drain away or plug using a suitable product from Cormix.

Contite ® HPWM

WATERPROOFING MEMBRANE FOR UNDERGROUND STRUCTURES

APPLICATION

Contite HPWM can be applied using a Robotic Spray Equipment such as Rotor Shotcreting Machine along with compressed air setup to feed the **Contite HPWM** through a Hose with 32 mm diameter, whereas water is mixed with **Contite HPWM** at the Nozzle.

The equipment details required are as mentioned below:

SHOTCRETE MACHINE

- Rotor shotcreting machine with rotor having 12 round holes. Each round hole is 90 mm high.
- The base of rotor with 90 mm coupling.
- The dust collector of rotor with 90 mm high coupling.
- The diameter of spraying nozzle = 32 mm, with approximately 16 to 18 water ring holes.
- The diameter of spraying hose = 32 mm.

Water Additions

Contite HPWM can be sprayed by adding water at the nozzle. The water additions should be between 35% to 55% by weight.

QUALITY CONTROL

Quality Control for checking thickness of applied membrane can be done as below :

1) Using wet film depth gauge, regular checking of wet film thickness can be done for applied membrane at various spots.
2) After application: cut out small patches of membrane in the form of square (5 x 5 cm) & check for thickness.

CURING

The material is tack free in 2-3 hours.
It may be over coated after 24 hours with concrete / shotcrete.

CLEANING

The Spray Equipment & the product carrying lines should be cleaned using Compressed air.
The Nozzle should be cleaned with water.

PACKAGING

15 KG bag or according to customer requirements.

STORAGE & SHELFLIFE

The shelf life is 12 months if unopened, stored free from frost, moisture and direct sunlight.

HEALTH & SAFETY

Contite HPWM is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Contite HPWM** is non-flammable. MSDS is available from Cormix.

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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Congrout ® Rokfix

CEMENTITIOUS CARTRIDGE FOR ROCK BOLTING

DESCRIPTION

Congrout Rokfix is a cementitious rock bolting grout packed in a water permeable membrane, forming a shrinkage compensated grout providing high early compressive strengths and fast setting times.

Congrout Rokfix is supplied in 2 grades very fast and normal setting [**Congrout Rokfix (S)**]. Setting times can be adjusted according to site requirements.

USES & ADVANTAGES

Congrout Rokfix is used for grouting rockbolts as reinforcement in tunneling and mining to protect overhead collapse.

Advantages include:-

- Laboratory tested pre-packed materials.
- Ready to use just add water.
- Non shrink, effective contact with rock.
- Good adhesion.
- Chloride Free.
- Minimizes grout loss from overhead holes or under conditions of running water.
- No grout wastage.

PROPERTIES

	Congrout Rokfix	Congrout Rokfix (S)
Appearance :	Grey powder	Grey powder
Pre soak time with water :	At least 1 minute	At least 1 minute
Yield :	Approx. 1 kg = 0.85-0.875 ltr	Approx. 1 kg = 0.65-0.675 ltr
Compressive Strength: (at 30ºC, Water/Powder ratio : 0.28)	> 15 MPa at 3 hrs > 50 MPa at 28 days	> 22 MPa at 24 hrs > 55 MPa at 28 days
Initial Setting Time :	≤ 5 min.	≥ 2 hrs.
Final Setting Time :	≤ 8 min.	≥ 3 hrs.

Using vicat apparatus.

The following table indicates the recommended resistance in tension loading for **Congrout Rokfix** using various sizes of rebar as per ASTM D4435

Rebar Size (mm)	Diameter of Drill Hole (mm)	Depth of Drill Hole (mm)	Recommended Resistance in Tension Loading (kN)
DB 12	45	300	28.1
DB 16	45	300	50.0
DB 20	45	300	78.1

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

APPLICATION

- Drill hole to the required length and diameter using drilling machine.
- Remove / clean any dirt / objects from inside the hole.
- Remove **Congrout Rokfix** from pail and immerse in water at least 1 minute or up to the point where no signs of air release.
- Insert **Congrout Rokfix** one by one into the drilled hole by pushing it using a rod or any long instrument to push it to the bottom of the hole until hole is filled.

Note: Congrout Rokfix *sets rapidly, work fast without delay.*

PACKAGING

50 cartridges per box.
Packed in a water permeable membrane and protected by a polyethylene cover.
Cartridge nominal sizes : 35 mm. diameter with 300 mm length is standard. Other sizes available on request.

STORAGE & SHELF LIFE

Store in dry shaded conditions. The unused **Congrout Rokfix** to be kept under double line polyethylene cover to avoid exposure to atmosphere. The shelf life is 6 months from date of manufacture in unopened original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Congrout Rokfix is alkaline avoid contact with skin & eyes. Gloves, goggles and dust mask should be worn. If **Congrout Rokfix** gets into eyes, washed out with copious amounts of clean water and medical attention sought. **Congrout Rokfix** is non-flammable.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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ISO 14001 : 2015 verified by Lloyd's Register International.

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Congrout ® A (Formerly Cormix A)

PLASTICISING GROUT INJECTION AID

DESCRIPTION

A ready to use grout injection aid in powder form. A multi component non chloride containing admixture which allows for the reduction in water cement ratio with corresponding strength increases. Expansion ensures good interfacial contact is maintained.

USES & ADVANTAGES

Use for the grouting of prestressed cable ducts, bearing plates, tunnel linings, rock & soil anchoring etc.

Advantages include:-

- Reduces mix water.
- Retards setting, prolongs workability.
- Provides fluid phase expansion.
- Reduces bleeding and segregation.
- Good strength and adhesion.
- Improved cohesion.
- Improved fluidity.
- Protects against corrosion of prestressing wires.

PROPERTIES

Appearance:	Beige/Light Brown powder
Apparent Density:	0.9 - 1.0 kg/ltr
Chloride Content:	Nil
Cement Compatibility:	Compatible with all types of Portland cement
Expansion Time:	15 - 120 minutes
Expansion:	According to ASTM C-827 an unrestrained expansion of 1-4% is typical depending on temperatures, dosage & mix.
Strength:	Restrained grouts up to 15% increase due to lower water cement ratio. Complies with CP110 Part 1: 1972 Section 6.12

METHOD OF USE / APPLICATION

Mixing times and w/c vary according to the application. With standard mechanical mixing for prestressed concrete work, a mixing time of 4 minutes with a w/c of 0.35 - 0.40 gives the best results.
The best mixing sequence is normally water / **Congrout A** /cement.

IMPORTANT NOTES

Congrout A is generally used in the highly specialized work of grouting and prestressing. Properties of **Congrout A** may be influenced by mixing procedure, cement properties, adding of water and temperatures. Therefore tests on site should be undertaken.
Congrout A should not be used with cement containing fly ash.

DOSAGE

Dose at 1.0 - 2.0% by weight of cement.

PACKAGING

0.5 kg. packs or 15 kg. bags.

STORAGE & SHELF LIFE

Store in dry shaded conditions. The shelf life is at least 12 months if kept dry in original packaging. High temperatures and humidity may reduce shelf life.

HEALTH & SAFETY

Wear gloves when mixing. Splashes on skin or eyes should be washed off with clean water.
Congrout A is non flammable.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Contite ® PUE 500/501

2 PART RIGID POLYURETHANE FOAM FOR SOIL & ROCK CONSOLIDATION AND BELOW GRADE WATER STOPPAGE

DESCRIPTION

A new generation phthalate free high performance low viscosity hydrophobic rigid polyurethane injection grout used to increase the load bearing capacity of loose soils, void filling or underpinning. **Contite PUE 500/501** reacts into either a hard foam or very hard plastic. Reaction times may be adjusted by varying the **Contite PUE 500/501** ratio. **Contite PUE 500/501** does not foam on its own, it needs water present to foam.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (S)

- Principle 4 : Structural Strengthening (SS).
  Method 4.5 – Injecting in Cracks, Voids or Interstices.
  Method 4.6 – Filling Cracks, Voids or Interstices.

USES & ADVANTAGES

Contite PUE 500/501 may be used for soil and rock consolidation, filling of large voids, cracks and crevices, pre injection for waterproofing and consolidation in front of TBM and drill and blast, filling of fissures, gravel layers, in wet and dry conditions.

Advantages Include:-

- Phthalates free resins.
- Solvent free.
- Fast or slow reactions available.
- Easy mixing 1:1 by volume.
- Can be applied in dry or wet conditions.
- Environmentally friendly.
- Expands 20-30 times.
- High strength.
- Non shrink.
- Bonds with soil and concrete.
- Stops repeated water erosion.
- Suitable for long distance injection.

PROPERTIES

	For Part A	For Part B
Appearance:	Yellow	Dark brown
Viscosity: (mPa.s)@25°C	70-120	170-270
SG:	1.04-1.06	1.22-1.25
pH Value:	5.5-6.5	7.0-8.0

Mixed Material	
Appearance:	Light brown
Viscosity:	100-200
Density:	1.13-1.16
pH Value:	6.0-7.0

Foam Properties	
Pot Life:	5 minutes
Reaction Time:	20-30 seconds
Expansion Time:	Approx. 5 minutes
Compressive Strength: ASTM C579	> 40 N/mm^2 at 7 days (with fine sand)
Tensile Strength: ASTM D638	1.5 MPa
Young's Strength: ASTM D638	50 MPa
Foam Density: ASTM D1622	96.8 kg/m^3

Foam Compressive Strength: 0.495 N/mm^2 at 7 days ASTM D1621

(Contite PUE 500/501) + 1% water : Rigid Foam (Less Expansion)
(Contite PUE 500/501) + 5% water : Less Rigid Foam (More Expansion)

MIX RATIO

Contite PUE 500 : Contite PU 501 = 1:1 by volume

APPLICATION

- **Contite PUE500/501** is injected using a 2 component injection machine such as GRACO REACTOR E-30 (plural component proportioner) where the two hoses are connected with an injection gun before injecting into the drilled holes.
- Clean and flush all equipment with **Contite PU Purge** prior to the injection.
- Check the mixing ratio of **Contite PUE 500** and **Contite PU 501** at the GRACO REACTOR by injecting the Part A & Part B under pressure initially, to ensure this is 1:1 mix ratio by volume.
- Fill the machine & hoses with **Contite PUE 500** Part A and **Contite PU 501** Part B and first flush the liquid into waste drums until fresh liquid is observed from the hoses.
- Insert the injection head into the drilled holes.
- Adjust pressure at the GRACO Reactor for Part A and Part B and start the injection, so as to achieve 1:1 mix ratio by volume.
- The injection should be continued until the water flow stops, or until the pre-measured amount of product has been injected in each drilled hole.
- After injecting into the first hole, remove the injection gun & start injecting into adjacent drilled hole situated at 30 cm interval from the previous drilled holes.
- Continue and repeat the injection steps with the adjacent drilled hole.
- When the injection has finished, clean and rinse all equipment with **Contite PU Purge**.
- All opened drums should be capped when not in use.

PACKAGING

400 litres set; available in **Contite PUE 500** 200 litres & **Contite PU 501** 200 litres in 200 litres steel drums. Other packing units are available on request.

STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry conditions. Stored in unopened sealed drums, in a dry area, at temperatures of 5°C-35°C, the shelf life is approximately 12 months.

HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with cleaner, followed by soap and water. Avoid breathing of vapours; use with adequate ventilation. Please consult our MSDS for more information (available upon request).

Contite ® PUE 500/501

2 PART RIGID POLYURETHANE FOAM FOR SOIL & ROCK CONSOLIDATION AND BELOW GRADE WATER STOPPAGE

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Contite ® PUE 700/701

2 PART FAST SETTING RIGID POLYURETHANE FOAM FOR SOIL & ROCK CONSOLIDATION AND BELOW GRADE WATER STOPPAGE

DESCRIPTION

A fast setting phthalate free high performance low viscosity hydrophobic rigid polyurethane injection grout used to increase the load bearing capacity of loose soils, void filling or underpinning. **Contite PUE 700/701** reacts into either a hard foam or very hard plastic.
Contite PUE 700/701 does not need addition of water to foam.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (S)
- Principle 4 : Structural Strengthening (SS).
  Method 4.5 – Injecting in Cracks, Voids or Interstices.
  Method 4.6 – Filling Cracks, Voids or Interstices.

USES & ADVANTAGES

Contite PUE700/701 may be used for soil and rock consolidation, filling of large voids, cracks and crevices, pre injection for waterproofing and consolidation in front of TBM and drill and blast, filling of fissures, gravel layers, in wet and dry conditions.

Advantages Include:-

- Phthalates free resins.
- Solvent free.
- Fast setting.
- Easy mixing 1:1 by volume.
- Can be applied in dry or wet conditions.
- Environmentally friendly.
- Expands 20-30 times.
- High strength.
- Non shrink.
- Bonds with soil and concrete.
- Stops repeated water erosion.
- Faster reaction times than **Contite PUE 500/501**.
- Foams without water.

PROPERTIES

	For Part A	For Part B
Appearance:	Yellow	Dark brown
Viscosity: (mPa.s)@25ºC	70-120	170-270
SG:	1.04-1.06	1.22-1.25
pH Value:	9.0-11.0	7.0-8.0
	Mixed Material	
Reaction Time:	10-20 seconds	
Expansion Time:	Approx. 1-2 minutes	
Compressive Strength: ASTM C579	> 40 N/mm^2 at 7 days (with fine sand)	
Tensile Strength: ASTM D638	1.5 MPa	
Young's Strength: ASTM D638	50 MPa	
Foam Rigidity Time:	< 5 minutes	
Foam Density: ASTM D1622	98.4 kg/m^3	

Foam Compressive Strength: 0.454 N/mm^2 at 7 days ASTM D1621

MIX RATIO

Contite PUE 700 : Contite PU 701 = 1:1 by volume.

APPLICATION

- **Contite PUE700/701** is injected using a 2 component injection machine such as GRACO REACTOR E-30 (plural component proportioner) where the two hoses are connected with an injection gun before injecting into the drilled holes.
- Clean and flush all equipment with **Contite PU Purge** prior to the injection.
- Check the mixing ratio of **Contite PUE 700** and **Contite PU 701** at the GRACO REACTOR by injecting the Part A & Part B under pressure initially, to ensure this is 1:1 mix ratio by volume.
- Fill the machine & hoses with **Contite PUE 700** Part A and **Contite PU 701** Part B and first flush the liquid into waste drums until fresh liquid is observed from the hoses.
- Insert the injection head into the drilled holes.
- Adjust pressure at the GRACO Reactor for Part A and Part B and start the injection, so as to achieve 1:1 mix ratio by volume.
- The injection should be continued until the water flow stops, or until the pre-measured amount of product has been injected in each drilled hole.
- After injecting into the first hole, remove the injection gun & start injecting into adjacent drilled hole situated at 30 cm interval from the previous drilled holes.
- Continue and repeat the injection steps with the adjacent drilled hole.
- When the injection has finished, clean and rinse all equipment with **Contite PU Purge**.
- All opened drums should be capped when not in use.

PACKAGING

400 litres set; available in **Contite PUE 700** 200 litres & **Contite PU 701** 200 litres in 200 litres steel drums. Other packing units are available on request.

STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry conditions. Stored in unopened sealed drums, in a dry area, at temperatures of 5ºC-35ºC, the shelf life is approximately 12 months.

HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with cleaner, followed by soap and water. Avoid breathing of vapours; use with adequate ventilation. Please consult our MSDS for more information (available upon request).

Contite ® PUE 700/701

2 PART FAST SETTING RIGID POLYURETHANE FOAM FOR SOIL & ROCK CONSOLIDATION AND BELOW GRADE WATER STOPPAGE

TECHNICAL SERVICE

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Contite ® Soil Stab

A HYDROPHILIC INJECTION GROUT FOR SOIL & ROCK CONSOLIDATION

DESCRIPTION

A two component low viscosity hydrophilic injection grout used for the consolidation of loose sandy soils, sealing of fractures and cracks in hard rock, containment curtain grouting and pre-injection grouting in tunnels.

USES & ADVANTAGES

Use in the consolidation of soils and rock. **Contite Soil Stab** has the following advantages:-

- Adjustable gel time.
- Non flammable.
- Environmentally friendly.
- Low viscosity.
- Can be injected into very small cracks & factures.
- Easily applied through simple mixing & pumping equipment.

PROPERTIES

	For Part A	For Part B
Appearance:	Turbid liquid	Slight yellow liquid
Viscosity:	Approx. 5 mPa,s	Approx. 8 mPa.s.
SG:	1.1-1.2	1.3-1.4

	Mixed Material (25% part B)
Appearance:	Clear liquid
Viscosity:	Approx. 5 mPa.s.
Density:	1.15-1.25

Cured Material

Compressive Strength: 1.5-2 N/mm^2 (20% mixture with sand)

Note : Properties may vary when the product is modified to specific site conditions.

APPLICATION

Contite Soil Stab is used for the consolidation of loose sandy soils and for sealing narrow fractures in hard rock. Soil characteristics should be investigated prior to commencing injection.

Soil injection should be carried out at the lowest possible pressure this is determined by load pressure on the soil, permeability, resin characteristics and injection speed.

Trial injection should be carried out to determine flow rate and the spacing of injection points.

Before injection and installation of injection tubes check for the presence of utilities and ground water, investigate soil & geological composition of the site & test permeability of the soil for water and grout.

Grout Preparation

Recommended equipment: A two component injection pump with variable mix ratio is recommended to use where two hoses are connected with a mixing head before attaching to the injection packers. A single component pump may be used only when the mix ratio of Part A and B is 3:1 and 4:1 by volume i.e. the working time is from 40 minutes to two hours. Do not use with the mix ratio of 1:1 and 2:1 by volume since the gel time is too short to work with a single component pump. Ensure the working time is enough to prevent any clogging.

MIXING

With two component injection pump no separate mixing procedure is required as the machine is equipped with its own mixing head.

To use with a single component pump at the mix ratio 3:1 and 4:1 by volume, mix Part A and Part B by adding material of Part A into Part B. Mix it thoroughly until the mixture becomes homogeneous which will be after about 2-3 minutes. Ensure Part B is fully premixed into Part A before the grout injection

The following gel time can be varied according to specific site conditions.

Mix ratio by volume Part A : Part B	Gel Time (at 25 ºC)
1 : 1	5 minutes
2 : 1	15 minutes
3 : 1	45 minutes
4 : 1	2 hours

INSTALLATION

Increase in temperature of 10ºC will approximately half reaction times.

Contite Soil Stab is injected into the ground via injection packers starting from the lowest depth as needed. Continue the injection with flow rate that allows material to permeate into the ground. The flow rate varies according to soil conditions. The pressure is ideally kept between 3 and 7 bar however may be increased if the soil compaction is too tight to inject the material. Continue injection until the soil condition is improved e.g. the leakage has stopped. Then lift the injection hose up at 30 cm intervals and repeat the above procedure.

In hard rock situations packers are to be inserted into the rock. Into sandy soils a strainer pipe can be used.

CONSUMPTION

Will depend on the compaction of soil & air voids to be filled. The consumption is approximately 1260 kg/m^3 for 100% air void without any sand (or) soil.

Contite ® Soil Stab

A HYDROPHILIC INJECTION GROUT FOR SOIL & ROCK CONSOLIDATION

CLEANING OF EQUIPMENT

All equipment can be cleaned with fresh water.

PACKAGING

Contite Soil Stab

Part A : Available in 1000 L IBC.
Part B : Available in 1000 L IBC.

STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry, well-ventilated conditions. Stored in well-sealed drum, in a dry area, at temperatures of 5ºC-35ºC, the shelf life is approximately 12 months in unopened drums. Do not store near combustible materials.

HEALTH & SAFETY

Part A is alkali and Part B is acidic. Always wear protective clothing, gloves and safety goggles. Use with adequate ventilation.

If in Eyes: Immediately flush eyes and skin with plenty of water for at least 15 minutes, holding lids a part to ensure flushing of the entire surface. Do not rub eyes. Get medical advice immediately.

Skin: Immediately flush skin with soap and water for at least 15 minutes. Also call a physician.

If swallowed/Ingestion: Do not induce vomiting. If a person is conscious and alert give 2-4 cupfuls of milk or water. Consult a physician immediately. Never give anything by mouth to an unconscious person.

Inhalation: Get medical aid immediately. Remove patient from exposure to fresh air immediately.

For spillages: Cleanup immediately cover with sand, dry lime or soda ash and place in a closed container for disposal.

TECHNICAL SERVICE

The Cormix International Limited 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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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CORMIX
One step ahead

(8.3)

Tunnel Lining

Cormix ® SP1A

HIGH RANGE WATER REDUCING SUPERPLASTICISER WITH HIGH EARLY STRENGTH PROPERTIES

DESCRIPTION

Cormix SP1A is a highly effective water reducing superplasticizer, an extremely powerful deflocculating agent, it operates by dispersing cement in to its primary particles which dramatically increases the flow characteristics of the cement paste. Based on the soluble salt of a polymeric sulphonate it conforms to Type A and F materials of ASTM C494 and EN 934-2 Table 7

USES & ADVANTAGES

Cormix SP1A may be used to produce flowing concrete with high early & ultimate strengths or in the production of precast concrete that requires substantial water reductions and very high early strengths.

Advantages include:-

- High strength concrete produced at normal workability and cement contents. The resultant concrete is of a dense impermeable nature.
- Substantial increase in workability without additional water.
- Normal setting without retardation.
- Very high early strengths.
- Significant strength increases.
- Increased production rates in precast yards.
- Better surface finish.
- Waterproof concrete may be achieved.
- Better resistance to wear & abrasion.
- Chloride free.
- Reduced shrinkage & creep.
- Suitable for hot climates.
- Improved water borne salt resistance.
- Substantial cement reductions due to accelerated early strengths.

PROPERTIES

Appearance: Brown liquid
Chemical: Napthalene Formaldehyde Sulphonate
Specific Gravity: 1.18 - 1.20 approx. at 20°C
pH Value: 7-9
Chloride Content: Nil

Compatibility with Cements:

Cormix SP1A can be used with all types of Portland Cement and pozzolanic materials.

Cormix SP1A is compatible with P.F.A., G.G.B.F.S. and Silica fume. For use with special cements we recommend that you consult Cormix International Ltd.

Compatibility with Other Admixtures:

Cormix SP1A should not be premixed with other admixtures. Consult Cormix when using other admixtures.

METHOD OF USE / APPLICATION

Cormix SP1A is supplied ready for use, it should be added to concrete mixes during the mixing process at the same time as the water or the aggregates. It should not be added directly to the cement.

DOSAGE

1.0-3.0 litre per 100 kg of total cementitious material. Exact dosage rates should be determined by trial mixes.

EFFECTS OF OVER-DOSING

Over-dosing of **Cormix SP1A** will generally produce a considerable increase in workability. Providing over dosed concrete is properly cured the ultimate strength will generally be higher than of a normal concrete.

PACKAGING

Cormix SP1A is supplied in 200 litre steel drums. Alternatively bulk deliveries can be arranged.

STORAGE & SHELF LIFE

Cormix SP1A should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out, to restore it to its normal state.

Cormix SP1A can also be stored under high, ambient temperatures, without any adverse effect on its performance.

The shelf life is at least 12 months when stored in original unopened containers.

HEALTH & SAFETY

Cormix SP1A is formulated from chemicals which present no fire or health hazards.

Do not take internally. If on skin wash off with soap and water. If in eyes wash out with copious amounts of water and seek medical attention.

For further information consult Cormix International Ltd.

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.

Cormix ® SP1A

HIGH RANGE WATER REDUCING SUPERPLASTICISER WITH HIGH EARLY STRENGTH PROPERTIES

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Cormix ® SP1B

HIGH RANGE WATER REDUCING SUPERPLASTICISER

DESCRIPTION

Cormix SP1B is a highly effective water reducing superplasticizer and an extremely powerful deflocculating agent, it operates by dispersing cement in to its primary particles which dramatically increases the flow characteristics of the cement paste. Based on the soluble salt of a polymeric sulphonate it conforms to Type A, D and G materials of ASTM C494 and BSEN 934-2 1998.

USES & ADVANTAGES

Cormix SP1B has been specifically formulated to allow use both in precast concrete & R.M.C. applications. Uses include to produce flowing concrete in :- congested areas, slabs and foundations, large pours, beams, columns and precast elements.

Cormix SP1B may also be used where substantial water reductions are required to provide high early and ultimate strengths e.g. in precast factories, prestressed concrete, bridges, shotcreting

Advantages include:

- Low cost solution for large precast projects.
- High strength concrete produced at normal workability and cement contents. The resultant concrete is of a dense impermeable nature.
- Substantial increase in workability without additional water.
- Normal setting without retardation.
- Very good early strengths.
- Significant strength increases.
- Increased production in precast yards.
- Better surface finish.
- Waterproof concrete may be achieved.
- Better resistance to wear & abrasion.
- Chloride free.
- Reduced shrinkage & creep.
- Suitable for hot climates.
- Improved water borne salt resistance.

PROPERTIES

Appearance: Brown liquid

Chemical: Napthalene Formaldehyde Sulphonate

Specific Gravity: 1.19 - 1.21 approx. at 20°C

pH Value: 5.5 - 7.0

Chloride Content: Nil

Compatibility with Cements:

Cormix SP1B can be used with all types of Portland Cement and pozzolanic materials.

Cormix SP1B is compatible with P.F.A., G.G.B.F.S. and Silica fume. For use with special cements we recommend that you consult Cormix International Ltd.

Compatibility with Other Admixtures:

Cormix SP1B should not be premixed with other admixtures. Consult Cormix when using other admixtures.

METHOD OF USE / APPLICATION

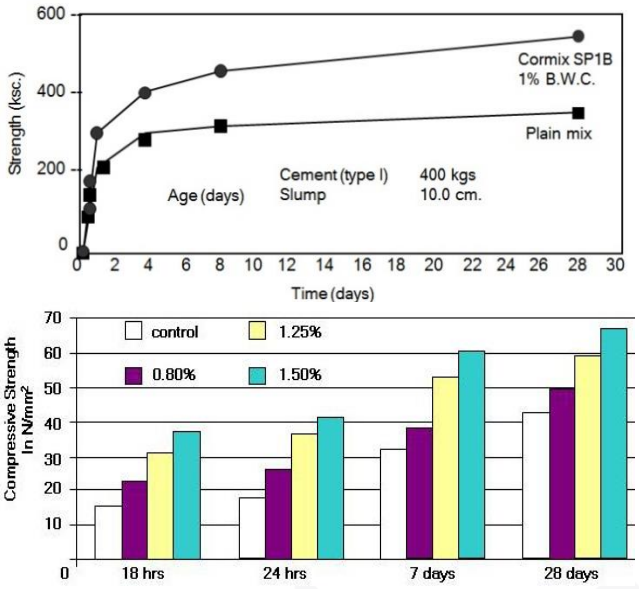
Cormix SP1B is supplied ready for use, it should be added to concrete mixes during the mixing process at the same time as the water or the aggregates. It should not be added directly to the cement.

DOSAGE

0.5 - 3.0 litre per 100 kg of total cementitious material. The exact dosage rates should be determined by trial mixes.

TYPICAL STRENGTH DEVELOPMENTS USING CORMIX SP1B

Cormix SP1B use to achieve High Early Strength Concrete Temp. 30°C



Typical strength development with different dosages of **Cormix SP1B** cement content 360 kg/m^2

W/C ratio varies to keep same slump (control : 0.40)

EFFECTS OF OVER-DOSING

Over-dosing of **Cormix SP1B** will generally produce a considerable increase in workability. Providing over dosed concrete is properly cured the ultimate strength will generally be higher than of a normal concrete.

PACKAGING

Cormix SP1B is supplied in 200 litre steel drums.

Alternatively bulk deliveries can be arranged.

Cormix ® SP1B

HIGH RANGE WATER REDUCING SUPERPLASTICISER

STORAGE & SHELF LIFE

Cormix SP1B should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out, to restore it to its normal state.
Cormix SP1B can also be stored under high, ambient temperatures, without any adverse effect on its performance. The shelf life is at least 12 months when stored in original unopened containers.

HEALTH & SAFETY

Cormix SP1B is formulated from chemicals which present no fire or health hazards.
Do not take internally. If on skin wash off with soap and water. If in eyes wash out with copious amounts of water and seek medical attention.
For further information consult Cormix International.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Cormix ® SP4

HIGH RANGE WATER REDUCING AND SET RETARDING CONCRETE ADMIXTURE

DESCRIPTION

Cormix SP4 is a versatile product specifically designed for producing free flowing concrete in hot climates. A substantial water reducing agent for promoting early and ultimate strengths. It is based on the soluble salt of polymeric sulphonate and retardant and is a powerful deflocculant.

Depending on the addition rate **Cormix SP4** conforms to Type A, D and G materials of ASTM designation C494 and BSEN 934-2 1998.

USES & ADVANTAGES

Cormix SP4 may be used in concrete tunnel linings, dams, power plants, highways, ports, and other large projects where high performance concrete is required.

Advantages include:

- Economical product for RMC companies.
- Flowable concrete for congested and large pours.
- Extension of workability.
- Improved impermeability and durability of concrete.
- Up to 25% water reduction.
- No excessive air entrainment or bleeding.
- Better surface finish.
- No adverse shrinkage.
- Increased early and ultimate strengths.
- Cement economies.
- **Cormix SP4** produces superplasticised concrete by direct addition at high dosage levels. The increase in workability is such that the concrete becomes self-compacting and limited vibration is required to achieve dense, void-free concrete.
- Incorporation of **Cormix SP4** into concrete aids cohesion, especially when harsh mixes are used.

This is a function of the slight air-entrainment properties of the product, which is characteristic of lignosulphonic acid derivatives. Slight air entrainment also improves the surface finish of the concrete.

PROPERTIES

Appearance:	Dark brown liquid
Specific Gravity:	1.17 - 1.19
pH Value:	5.0 - 7.0
Chloride Content:	Nil

Compatibility with Cements:

Cormix SP4 can be used with all types of Portland Cement and pozzolanic materials. For use with special cements we recommend that you consult Cormix.

Cormix SP4 is compatible with P.F.A., G.G.B.F.S., and Silica Fume.

Compatibility with Other Admixtures:

Cormix SP4 should not be premixed with other admixtures. Consult Cormix when using other admixtures.

METHOD OF USE / APPLICATION

Cormix SP4 is supplied ready for use, it should be added to concrete mixes during the mixing process at the same time as the water or the aggregates. It should not be added directly to the cement.

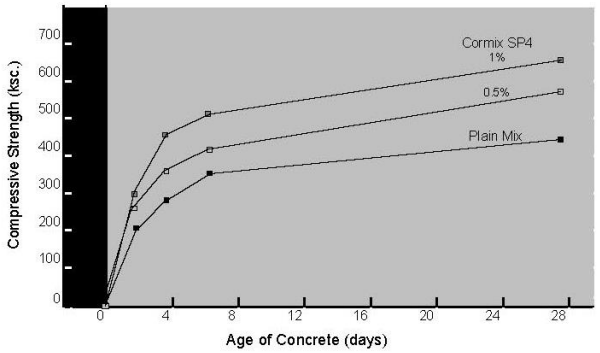
DOSAGE

0.5 - 2.0 litre per 100 kg of total cementitious material.

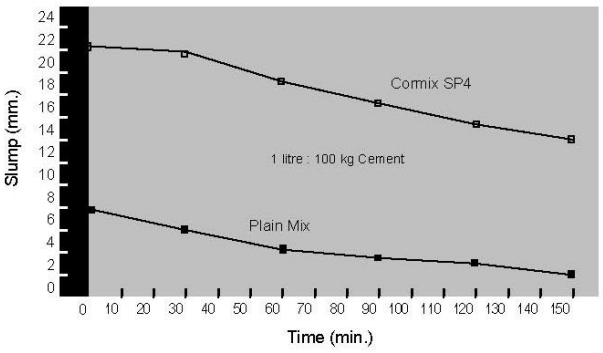
Exact dosage rates should be determined by trial mixes.

TYPICAL RESULT USING CORMIX SP4

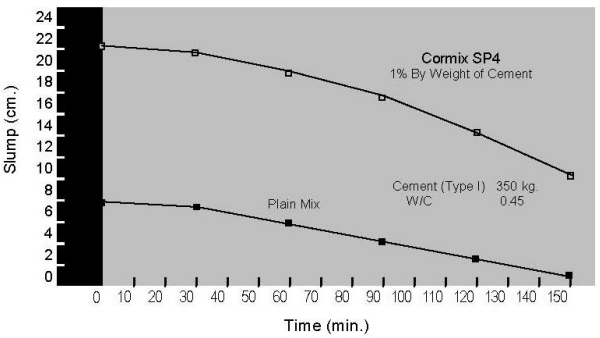
Early Strength
Temp. 30°C



Improved Workability & Slump Retention
Same W/C = 0.48 Temp. 30°C



Superplasticising Effect & Slump Retention
Same W/C = 0.45 Temp. 30°C



Cormix ® SP4

HIGH RANGE WATER REDUCING AND SET RETARDING CONCRETE ADMIXTURE

EFFECTS OF OVER-DOSING

Over-dosing of **Cormix SP4** will generally produce a considerable increase in workability, and in certain circumstances a slight increase in air-entrainment. Providing over dosed concrete is properly cured the ultimate strength will generally be higher than that of a normal concrete.

The effects of over-dosing are increased when sulphate resisting cement (Type V) is used in the concrete mix, because of the chemical nature of the cement compared to that of ordinary Portland Cement (Type I).

PACKAGING

Cormix SP4 is supplied in 200 litre steel drums.

Alternatively bulk deliveries can be arranged.

STORAGE & SHELF LIFE

Cormix SP4 should preferably be stored protected from frost. If the product does become frozen it should be carefully mixed after thawing out, to restore it to its normal state.

Cormix SP4 can also be stored under high, ambient temperatures, without any adverse effect on its performance. The shelf life is a minimum of 12 months when unopened.

HEALTH & SAFETY

Cormix SP4 is formulated from chemicals which present no fire or health hazards.
Do not take internally. If on skin wash off with soap and water. If in eyes wash out with copious amounts of water and seek medical attention.
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Cormix ® AFL RT1

ALKALI-FREE LIQUID HARDENING ACCELERATOR

DESCRIPTION

Cormix AFLRT1 is an alkali-free liquid admixture formulated to provide faster hardening acceleration in shotcrete, while reducing the safety hazards associated with traditional alkaline shotcrete accelerators. It may be used for shotcrete applied by dry or wet spraying. Complies of ASTM C1141, Type II & Grade 9, Class A.

USES & ADVANTAGES

Cormix AFLRT1 can be used with shotcrete in tunneling, mining, and slope stabilization. It is ideally suited for wet mix sprayed concrete for rock support.

Advantages include:

- Quick setting properties which allow for rapid work progress and the ability to construct thick sprayed concrete linings via layered application during construction sequence.
- Easy handling, as well as facilitating accurate addition to the concrete.
- Very low dust production and therefore a good working environment.
- Provides improved working safety and less environmental impact.
- Early-age strength development, excellent long-term strength and durability.
- High resistance to carbonation.
- Reduced water permeability.
- Better adhesion.
- Reduced rebound.
- Alkali free.

PROPERTIES

Appearance:	Clear Liquid
pH Value	$\geq$ 2.5
Density:	Approx. 1.30-1.35 kg/ltr.
Na_2O:	<0.1%
Chloride Content (Cl-):	<0.01%

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

Initial Setting Time:	< 3 minutes ASTM C1398
Final Setting Time:	$\leq$ 4 min 30 sec

APPLICATION

According to the required setting time and early strengths, Cormix AFLRT1 can be added at a dosage of 3-10% by weight of binder. Overdosing may result in decreased strength.

The dosage depends on temperatures, reactivity of cement used, required thickness of layers, setting time and early strength development required. The use of fresh cement is recommended.

Dosage equipment and pumps must be made of acid- resistant materials.

Mono pumps (screw pumps) and squeeze pumps (rotary pumps) can work well, but piston pumps, pressure tanks and gear pumps should not be used.

It is preferable to use concrete with cement contents of no less than 400 kg/m^3 for high early strength.

Cormix AFL RT1 can be sensitive to different types of cement. It is suggested to use 100% clinker Portland cement for earlier setting time.

During wet-mix spraying, the w/c ratio should be below 0.5 (preferably below 0.45) to achieve better results. The water content in aggregate must be taken into account in the calculation of water-cement ratio.

Cormix AFL RT1 is added at the nozzle through a separate accelerator hose.

Before **Cormix AFL RT1** is used, the entire dosing equipment must be thoroughly cleaned with a lot of water. During concreting and work breaks the system must remain closed to avoid blockage.

Cormix AFL RT1 must not be stored in steel containers. The storage containers must be closed tightly to avoid the evaporation of the water and resulting film formation on the surface.

Prior to and after using **Cormix AFL RT1**, clean the hoses, pumps, and other instruments thoroughly with plenty of water.

Do not mix Cormix AFL RT1 with any type of accelerator produced by another manufacturer, as this could cause immediate clogging of pumps and hoses.

All necessary suitability tests must be performed before use.

GENERAL INFORMATION - SHOTCRETE MIX DESIGN

Typical Shotcrete Mix Design

Ordinary Portland Cement Type I	420 kg/m^3
River Sand	700 kg/m^3
Crushed Rock Fines	500 kg/m^3
Aggregates <10 mm	450 kg/m^3
Water	189 litre/m^3

The above is a typical shotcrete mix design excluding superplasticisers, silica fume, steel fibres, accelerators and other additives.

Cormix ® AFL RT1

ALKALI-FREE LIQUID HARDENING ACCELERATOR

Gradation Limits for Shotcrete Aggregate

Sieve Sizes (mm)	% by Weight Passing Individual Sieves Gradation No.1	No.2	No.3
19	-	-	100
12.5	-	100	80-95
9.5	100	90-100	70-90
4.75	95-100	70-85	50-70
2.36	80-100	50-70	35-55
1.18	50-85	35-55	20-40
0.60	25-60	20-35	10-30
0.30	10-30	8-20	5-17
0.15	2-10	2-10	2-10

Dry Mix

Dry mix shotcrete must allow for increased rebound composed mainly of larger aggregate, unlike wet mixes increase aggregate contents to allow for loss in application is not a problem. Below is a typical dry mix shotcrete mix design. In dry mix shotcrete usually the only type of admixtures used are accelerators combined with silica fume and steel fibres.

Sample Dry Mix (Design 1 m^3):

Aggregate (Gradation No.2)	1,670 kg
Cement	350-400 kg
Silica Fume (**Cormix SF1**)	50 kg
Steel Fibres (if required)	40-60 kg

Wet Mix

Wet mix design is similiar to pumpable concrete mixes. The material must be flowable enough at low water cement ratios to flow through the hose stay in place once blown onto the surface and rapidly gain strength. Wet mix shotcrete typically contains Superplasticisers (**Cormix SP1**), Air Entrainers (**Conair**), Silica Fume (**Cormix SF1**) and Steel Fibres.

Below is a typical wet mix shotcrete design:

Sample Wet Mix (Design 1 m^3)	
Aggregate (Gradation No.2)	1,600 kg
Cement	420 kg
Silica Fume (**Cormix SF1**)	40 kg
Superplasticiser, Water Reducer (**Cormix SP1, Cormix R1**) & Air Entrainer (Conair)	5-10 kg
Water (approx.)	210 kg
Steel Fibres (if required)	40-60 kg

Cormix International technical service department is available to advise on shotcrete mix design and the appropriate additives to use.

Dry & Wet Shotcrete Additives Available from Cormix

Dry Mix Additives

Cormix AFP	Alkali Free Powder Accelerator
Cormix SF1	Silica Fume

Wet Mix Additives

Cormix AFL RT1	Alkali Free Liquid Accelerator
Cormix SP1	Superplasticiser Admixture
Cormix SF1	Silica Fume
Conair	Air entraining Additive

PACKAGING

Cormix AFL RT1 is supplied in 200 litre drums or 1,000 litre IBC tanks.

STORAGE & SHELF LIFE

Cormix AFL RT1 must be stored at a minimum of +5°C and maximum of +35°C. **Cormix AFL RT1** has to be kept in closed containers made of plastic, glass fibre plastic or stainless steel. **Cormix AFL RT1** must not be stored in normal steel containers as the pH can cause corrosion that may affect the performance of the product.

After prolonged storage we recommend that **Cormix AFL RT1** always be fully agitated prior to use by mechanical stirring or re-circulation pumping. Agitation by compressed air is strictly not advised.

If stored in tightly closed original containers under the above given conditions, **Cormix AFL RT1** has a shelf life of 3-6 months.

Open containers will allow prolonged contact with air leading to skin film and lumps being produced that may cause blocking of accelerator system.

It is recommended that your local Cormix International representative be consulted prior to the use of any product that has been frozen.

Performance testing should always be carried out before use.

HEALTH & SAFETY

Wear rubber gloves and goggles to avoid eye and skin contact. If contact occurs, clean with plenty of water. In case of eye contact, seek medical advice.

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.

Cormix ® AFL RT1

ALKALI-FREE LIQUID HARDENING ACCELERATOR

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.

ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

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Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advice offered.

CONTACT DETAILS

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Contite ® PU100/101

RAPID FOAMING WATER STOPPING MATERIAL

DESCRIPTION

Contite PU100/101 is a one component hydrophobic polyurethane injection grout, when used in conjunction with **Contite PU101** it produces an effective means of stopping water seepage. **Contite PU100** consists of MDI based, solvent free isocyanate component & a special catalyst **Contite PU101**. The system only reacts when it comes into contact with water producing a relatively stiff polyurethane foam.

Complies to EN1504 Part 9 and EN1504 Part 5. Class (S)

- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 – Filling Cracks.

USES & ADVANTAGES

Contite PU100/101 is used to stop water penetration or react away water in cracks, voids or soil.

Hydrophobic injection foams are usually considered as temporary waterstops as far as cracks are concerned. For additional sealing after the waterflow has stopped **Contite PUE200/E201** may be used for elastic sealing or **Contite PUE300/301** for rigid sealing (structural repair).

The unconfined expansion of the foam is up to 30 time's the original volume.

The resin can be injected using a one component pump and if required the reaction time can be adjusted to up to one second by addition of different amounts of **Contite PU101**.

Uses include for:-

- Stopping water seepage.
- Sealing leaking cracks & voids.
- Injection in leaking diaphragm walls.

Typical applications include :- sealing leaks in tunnels, basements, subways, pipe lines, manholes, dams, reservoirs, pools, water tanks etc.

Advantages include:-

- Solvent & filler free.
- Good adhesion to substrate.
- Insignificant shrinkage, stable when cured.
- Controlled expansion reacting away the water no
- "Sponge" effect.
- MDI based safer than TDI types.
- Reaction time may be modified, suitable for stopping seepage to heavy leakage.

PROPERTIES

	Contite PU100	Contite PU101
Colour :	brown	clear
SG : (ASTM D1475)	1.12-1.14	0.93-0.95
Viscosity at 25°C, mPa.s : (ASTM D2196)	50-150	10-20

Pot life : 4-8 hrs when protected from moisture

Density of the mixture : at 25°C (77°F) approx. 1.12 kg/l (9.3 lb/gallon)

Density of the fully cured foam (free foamed) : approx. 30-40 kg/l

Volume expansion : max.1 : 30 (free foamed)

Starting time : approx. 1-10 seconds

Expansion time : approx. 10-20 seconds

Application temp. : +5°C to +50°C

Flash point : > 100°C

INSTRUCTIONS FOR USE

Contite PU100/101 may be used with high or low pressure injection equipment via installed injection packers or similar. To get controlled reaction with the water the gel time can be adjusted by adding **Contite PU101** to **Contite PU100** in accordance with the table below.

Dosage of Contite PU101 in % by weight of Contite	Reaction Time of Contite PU100/ 101	Material Temperature		
		5°C (41°F)	21°C (70°F)	30°C (86°F)
4%	Expansion Start	~ 22 sec	~ 20 sec	~ 20 sec
	Expansion end	~ 95 sec	~ 88 sec	~ 80 sec
6%	Expansion Start	~ 22 sec	~ 18 sec	~ 14 sec
	Expansion end	~ 80 sec	~ 73 sec	~ 60 sec
8%	Expansion Start	~ 14 sec	~ 13 sec	~ 12 sec
	Expansion end	~ 60 sec	~ 52 sec	~ 50 sec
10%	Expansion Start	~ 14 sec	~ 14 sec	~ 11sec
	Expansion end	~ 50 sec	~ 47 sec	~ 40 sec

Note : The given data are laboratory parameters and may deviate depending on the object and conditions on site.

- The starting time is the time at which the mix starts foaming; starting from point 0.
- The expansion time is when the reaction is completed & no further expansion is noted.

Depending on the velocity of running water or the amount of water expected in the crack the gel time should be fixed before injection.

The blended material can be pumped by the use of a single component injection pump equiped for higher pressure to withstand the water pressure.

If cracks or voids are dry flush by injecting with clean water before resin injection.

To prevent condensation on the liquids at the beginning of work the temperature of the components should be at least as high as ambient temperature. All opened drums should be capped when not in use.

Contite ® PU100/101

RAPID FOAMING WATER STOPPING MATERIAL

PACKAGING

Contite PU100 : 20 kg or 2 kg in a can.
Contite PU101 : 2 kg or 200 g in a can.

Other packing units on request.

STORAGE & SHELF LIFE

Store in the shade in dry conditions. Stored in well-sealed drums, in a dry area, at temperatures of 5ºC - 35ºC, the shelf life is approximately 12 months in unopened drums.

HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with waterless cleaner, followed by soap and water. Avoid breathing of vapours; use with adequate ventilation. Please consult our MSDS for more information (available upon request).

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Contite ® PUE200/201

A POLYURETHANE RESIN FOR ELASTIC SEALING OF BOTH DRY & WET CRACKS

DESCRIPTION

Contite PUE200/201 is a two component, solvent and phthalate free, polyurethane system consisting of a resin component **Contite PUE200** and special hardener **Contite PU201.**

The system is ideal for the elastic sealing of cracks in concrete structures as well as areas suffering from water leakage.

USES & ADVANTAGES

Contite PUE200/201 can be used directly into dry & moist cracks, if water leakage must be stopped first.

Contite PUE200/201 can be used in combination with **Contite PU100/101** which will first stop the water and or react the water away after which the injection of **Contite PUE200/201** can be carried out.

Typical areas of use are :-

- The elastic sealing of cracks in concrete structures such as basements, tunnels etc.
- The sealing of cracks and joints and leaks in other structures.
- As injection material for injection hoses.

Advantages include:-

- Good adhesion on wet as well as on dry concrete.
- Low viscosity, therefore a good penetration into the crack.
- Can be applied as one or as two component.
- The curing time can be adjusted relatively simply.
- The cured material is resistant to hydrolysis.
- Cracks can be injected with water before sealing. The advantage is adequate cleaning and a good control of the flow characteristics.

PROPERTIES

	Contite PUE200	Contite PU201
Colour :	Yellow	Dark brown
SG :	1.04-1.06	1.22-1.24
(ASTM D1475)		
Viscosity at 25ºC, mPa.s :	30-60	170-270
(ASTM D2196)		
(at 77ºF, lb/ft.s	0.02-0.04	0.11-0.18)
Pot life at 25ºC (77ºF):	60-70 min	
Gel time at 25ºC (77ºF):	70-90 min	

APPLICATION

Although **Contite PUE200/201** is a two component systems it can be used as a one component.

Used as One Component System

Step 1 : Add the required amount of **Contite PU201** to the **Contite PUE200**.

Step 2 : Mix it thoroughly until a homogeneous mixture has been obtained, which will be the case after about 2 minutes.

Step 3 : The mix can be pumped by means of a single component injection pump. Keep in mind that the gel time of the system is 70-90 minutes at 25ºC (77ºF).

After the injection the pump should be cleaned with **Contite PU Purge** (these product may not contain any water).

In the case of a two component application it is possible to speed up the reacting time to obtain faster curing. For this purpose Cormix supplies a special catalyst, **Contite Cat 42**, to be added to the **Contite PUE200**.

The following table clearly indicates the influence of adding **Contite Cat 42** to the **Contite PUE200** on the gel time of the mixture.

Dosage of Contite Cat42 in % by weight of Contite PUE200	Material Temperature		
	5°C (41°F)	21°C (70°F)	30°C (86°F)
	Reaction Time		
0.00%	~ 90 min	~ 90 min	~ 80 min
0.20%	~ 45 min	~ 40 min	~ 29 min
0.40%	~ 35 min	~ 30 min	~ 18 min
0.60%	~ 25 min	~ 25 min	~ 12 min
0.80%	~ 16 min	~ 15 min	~ 9 min
1.00%	~ 12 min	~ 11min	~ 6 min

Note : The given data are laboratory parameters and may deviate depending on the object and conditions on site.

* To prevent condensation on the liquids at the start of work, the temperature of the components should be at least as high as the ambient temperature.

** All opened drums of **Contite PUE200/201** should be purged with dry nitrogen and capped when not in use.

MIX RATIO

Contite PUE 200 : Contite PU 201 = 5 : 3 by weight.
Contite PUE 200 : Contite PU 201 = 2 : 1 by volume.

MECHANICAL & PHYSICAL PROPERTIES OF THE END PRODUCT

	According to Unit	Value
Elongation at break :	ASTM D638 %	> 20
Shore D hardness :	ASTM D2240	20-30

PACKAGING

16 kg (35 lb) set;
Contite PUE200 = 10 kg (22 lb)
Contite PU201= 6 kg (13 lb) in a can.
Other packing units on request.

Contite ® PUE200/201

A POLYURETHANE RESIN FOR ELASTIC SEALING OF BOTH DRY & WET CRACKS

STORAGE & SHELF LIFE

Contite PUE200/201 are very stable when properly handled.
To avoid problems, it is very important to understand that these materials are both temperature and moisture sensitive. Therefore, materials should be stored in an area with temperatures not exceeding 35ºC (95ºF) or not lower than 5ºC (41ºF), the shelf life is approximately 12 months in unopened drums.
All part used drums should be covered by nitrogen and re-sealed to prevent the ingress of moisture.

HEALTH & SAFETY

Ordinary hygienic principles, such as washing the compounds from the hands before eating or smoking should be observed. Hands should be washed with a waterless cleaner followed by soap and water. Avoid breathing of vapours, prolonged contact with the skin, contact with open breaks in the skin, and ingestion. Use **Contite PUE200/201** with adequate ventilation.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Contite®PUE 300/301

A POLYURETHANE RESIN FOR RIGID STRUCTURAL SEALING OF DRY CRACKS

DESCRIPTION

Contite PUE 300/301 is a two component, solvent and phthalate free, polyurethane system consisting of a resin component **Contite PUE 300** and special hardener **Contite PU 301**.
This system is ideal for the structural sealing of cracks in concrete structures.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (F)

- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 - Filling Cracks.
- Principle 4 : Structural Strengthening (SS).
  Method 4.5 - Injecting in Cracks, Voids or Interstices.
  Method 4.6 - Filling Cracks, Voids or Interstices.

USES & ADVANTAGES

Contite PUE 300/301 is applied directly into dry cracks. If water leakage has to be stopped **Contite PUE 300/301** can be used in combination with the **Contite PU100/101**. **Contite PU100/101** will first stop the water and/or react the water away, after which the injection of **Contite PUE 300/301** can be carried out.

Typical areas of use are :-

- The structural sealing of cracks in concrete such as basements, bridges, tunnels, marine structures etc. In areas where dry cracks are present and a structural sealing is needed.

Advantages include:-

- Good adhesion on dry concrete.
- Low viscosity; therefore good penetration into the crack.
- Can be applied as one or two component material.
- The curing time can be adjusted relatively simply.
- The cured material is resistant to hydrolysis.
- Moisture tolerant.

PROPERTIES

	Contite PUE300	Contite PU301
Colour :	light yellow	dark brown
SG : (ASTM D1475)	1.04-1.06	1.22-1.24
Viscosity at 25ºC, mPa.s: (ASTM D2196)	70-120	170-270
(at 77ºF, lb/ft.s	0.047-0.08	0.11-0.18)
Pot life at 25ºC (77ºF) :	40-60 min.	
Gel time at 25ºC (77ºF) :	60-80 min.	
Compressive Strength: (ASTM C579)	> 50 N/mm^2 at 7 days	
Elongation at break : (ASTM D638)	4%	
Shore D hardness : (ASTM D2240)	75-80	

APPLICATION

Although **Contite PUE300/301** is a two component system it can be used as a one component system.

Used as a One Component System.

Step 1 : Add the required amount of **Contite PU301** to the **Contite PUE300**.

Step 2 : Mix it thoroughly until a homogeneous mixture has been obtained, about 2 minutes.

Step 3 : The mix can be pumped by means of a sin-gle component injection pump. The pot life of the system is 40-60 minutes at 25ºC (77ºF).

After the injection the pump should be cleaned with **Contite PU Purge**.

Used as Two Component System

In case a faster curing must be obtained **Contite PUE 300/301** can be applied as a two component system by means of mixing / metering equipment. Due to the low viscosity of the components a simple static mixer can be used.

In the case of a two component application it is possible to speed up the reacting time to obtain faster curing. For this purpose Cormix supplies a special catalyst, **Contite Cat 42**, to be added to the **Contite PUE 300**.
The following table clearly indicates the influence of adding **Contite Cat 42** to the **Contite PUE 300** on the gel time of the mixture.

Dosage of Contite Cat 42 in % by weight of Contite PUE300	Material Temperature		
	5°C (41°F)	21°C (70°F)	30°C (86°F)
	Reaction Time		
0%	~ 62 min	~ 60 min	~ 50 min
0.20%	~ 28 min	~ 27 min	~ 12 min
0.40%	~ 22 min	~ 20 min	~ 10 min
0.60%	~ 12 min	~ 11 min	~ 6 min
0.80%	~ 11 min	~ 8 min	~ 5 min
1.00%	~ 10 min	~ 6 min	~ 3 min

Note : The given data are laboratory parameters and may deviate depending on the object and conditions on site.

After injection the pumps and the mixing head should be cleaned with **Contite PU Purge**.

Note : To prevent condensation on the liquids at the start of work, the temperature of the components should be at least as high as the ambient temperature.
All opened drums of **Contite PUE 300/301** should be capped when not in use.

MIX RATIO

Contite PUE 300 : Contite PU 301 = 1 : 1.15 by weight
or
Contite PUE 300 : Contite PU 301 = 1.02 : 1 by volume

PACKAGING

18.70 kg (41.22 lb) set;
Contite PUE 300 = 8.70 kg (19.18lb)
Contite PU 301 = 10 kg (22.04 lb) in a can.
Other packing units on request.

Contite® PUE 300/301

A POLYURETHANE RESIN FOR RIGID STRUCTURAL SEALING OF DRY CRACKS

STORAGE & SHELF LIFE

Contite PUE300/301 are very stable when properly handled.
To avoid problems, it is very important to understand that these materials are both temperature and moisture sensitive. Therefore, materials should be stored in an area with temperatures not exceeding 35ºC (95ºF) or not lower than 5ºC (41ºF), the shelf life is approximately 12 months in unopened drums.
All part used drums should be resealed to prevent the ingress of moisture.

HEALTH & SAFETY

Ordinary hygienic principles, such as washing the compounds from the hands before eating or smoking should be observed. Hands should be washed with a water less cleaner followed by soap and water. Avoid breathing of vapours, prolonged contact with the skin, contact with open breaks in the skin, and ingestion. Use **Contite PUE 300/301** with adequate ventilation.

TECHNICAL SERVICE

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Contite ® PUE 400/E401

A TWO IN ONE POLYURETHANE INJECTION RESIN

DESCRIPTION

Contite PUE 400/E401 is a 2 component hydrophobic polyurethane 2 in 1 injection resin system.
When **Contite PUE 400/E401** comes in to contact with water it reacts rapidly to form flexible foam which stops leakage of water from the concrete crack, if injected in dry conditions it forms a solid elastic resin to permanently seal the crack.
Complies to EN1504 Part 9 and EN1504 Part 5 Class (D)
- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 – Filling Cracks.

USES & ADVANTAGES

Contite PUE 400/E401 is a rapid reacting resin used to stop the water leakage in the short term as well as to form a solid resin for permanent sealing of cracks.
Contite PUE 400/E401 is used to stop water penetration or react away water in cracks, voids or soil. The resin can be injected using a one component pump.

Uses include for:
• Injection to dry wet cracks.
• Stopping water seepage.
• Sealing leaking cracks & voids.
• Injection in leaking diaphragm walls.

Typical areas of use include:-
Sealing leaks in tunnels, basements, subways, pipe lines, manholes, dams, reservoirs, pools, water tanks etc.

Advantages:
• 2 in 1 system: only one product needed at jobsite.
• Simple mix ratio 1:1 by weight and volume.
• Reinjection through the same packers as initial.
• Solvent & filler free.
• Good adhesion to substrate.
• Insignificant shrinkage, stable when cured.
• Controlled expansion reacting away the water no "Sponge" effect.
• MDI based safer than TDI types.

PROPERTIES

	For Part A	For Part B
Appearance :	Light yellow liquid	Dark brown liquid
Viscosity (mPa.s) at 25°C,:	120-150	100-200
Specific gravity :	1.03-1.05	1.13-1.15
	Mixed Material	
Pot life :	15-20 Minutes	
Gel time :	20-40 Minutes	
	Foam Properties	
Reaction time:	Approx. 20-60 seconds	
Expansion time:	Approx. 2 – 5 minutes	
Application temp:	+5°C to +50°C (41°F to 122°F)	
Flash point:	> 100°C (212°F)	

MIX RATIO

Contite PUE 400 : Contite PUE401 = 1:1 by weight.
or
Contite PUE 400 : Contite PUE401 = 1.1:1 by volume.

INSTRUCTIONS FOR USE

Depending on the status of crack, wet or dry the gel time should be fixed before injection. The blended material can be pumped by the use of a single component injection pump equipped for high pressure.
If cracks or voids are dry flush by injecting with clean water before resin injection. To prevent condensation on the liquids at the beginning of work the temperature of the components should be at least as high as ambient temperature. All opened drums should be capped when not in use.

*Note : **Contite PUE 400/E401** is suitable for stopping water leakages. Where water pressure < 1 bar.*

MIXING

Mix part A & B using a slow speed drill and paddle (400 rpm.). Mix the material approx. 2-3 minutes until a homogeneous mixture is formed.

APPLICATION

Contite PUE 400/E401 is used to stop water penetration or react away water in cracks, voids or soil. It is injected as a single component via injection packers into the water bearing zones using a manual pump or electrical injection pump. When in contact with water, the PU foams up strongly and hardens. Inject **Contite PUE 400/E401** until the resin is discharged as foam from the adjoining drill hole or respectively the surface of crack. The follow up injection has to be carried out within the pot life of the initially injected material. (When filling large, wet voids inject in two stages. Waiting time bet-ween the first and second injection is at least 1-2 hours.)

For stopping water leakage:

- For vertical cracks or inclined cracks begin by pumping material into the bottom entry port. Material will react with leaking water forming flexible foam and stop water. Keep injecting until the material appears above the bottom entry. Disconnect and start injection at the above packer.
- For horizontal cracks the injection should proceed from one end of the crack to the other in the same manner.

Contite ® PUE 400/E401

A TWO IN ONE POLYURETHANE INJECTION RESIN

For crack sealing:

- Crack width : 3-10 mm.
- For vertical cracks or inclined cracks begin by pumping material into the bottom entry port. Material will react and for a solid elastic resin to seal the cracks. Keep injecting until the material appears above the bottom entry. Disconnect and start injection at the above packer.
- For horizontal cracks the injection should proceed from one end of the crack to the other in the same manner.

The crack is full if the pressure can be maintained.

PACKAGING

20 kg (44 lb) set; **Contite PUE 400** 10 kg (22 lb) & **Contite PUE 401** 10 kg (22 lb) in steel packaging. Other packing units are available on request.

STORAGE CONDITIONS & SHELF LIFE

Store in the shade in dry conditions. Stored in well-sealed drums, in a dry area, at temperatures of 5°C-35°C, the shelf life is approximately 12 months in unopened drums.

HEALTH & SAFETY

Avoid skin and eye contact. Wear rubber gloves and safety goggles. Hands should be cleaned with cleaner, followed by soap and water avoid breathing of vapours; use with adequate ventilation.

Please consult our MSDS for more information (available upon request).

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Contite ® G600

A HYDROGEL FOR SHUTTING OFF HEAVY WATER LEAKAGES WITH HIGH TENSILE ADHESION TO WET & DRY SUBSTRATES

DESCRIPTION

Contite G600 is a hydrogel injection grout to be used as a water stopping system producing depending on the amount of water a tough flexible foam or an elastomeric gel. It provides an effective means of stopping water seepage and consists of a solvent free material that only reacts when it comes into contact with water.
Complies to EN1504 Part 9 and EN1504 Part 5 Class S
- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 – Filling Cracks.

USES & ADVANTAGES

Contite G600 is a hydrophilic prepolymer that reacts with water over a range from 1:1 (polymer to water) forming an impermeable elastic foam and at a ratio 1:5 (polymer to water) a highly resilient elastomeric gel.
Properly applied **Contite G600** adheres to the surface and forms a tough, rubbery gasket that immediately stops water.
Depending on the amount of water it may be injected direct as a single component system into the leaking crack or joint or as two component system by means of a mixing/metering machine using water as a second component.
Typical areas of use include shutting off water seepage, forming a positive side waterproof membrane with below grade structures injected from the negative side, for reinjectable hoses & soil stabilization, prevention of water leakage in sewerage and drainpipes, ground stabilization, prevention of water leaks through expansion or construction joints, etc.
In areas where the water is saline such as undersea tunnels **Contite G600S** can be used to replace standard **Contite G600**. The final performance characteristics will be the same as **Contite G600**.
Advantages include:-

- One part easy to handle on the jobsite.
- In the reaction with water a foam or a gel will be formed depending on the amount of water.
- None of the ingredients are corrosive, the hydrogel based on **Contite G600** is non corrosive in liquid or in cured form.
- If the cured material dries out it will remain flexible; when water returns it will return to its original shape picking up the same amount of water.
- Solvent free.
- Reacts with water.
- May use as a single or two component system.
- Good adhesion on wet as well as on dry concrete.
- Low viscosity; therefore, good penetration.
- The curing time can be adjusted by changing the amount of water.
- Can be used as foam or as gel.
- Cured material is non-toxic.
- Eco friendly. No VOCs.
- Saltwater version available.

PROPERTIES

Colour :	Clear Yellowish Liquid
SG :	1.09-1.12
Viscosity at 25ºC : (77ºF) (#62/60 r.p.m.)	350-650 mPa.s
pH:	7 - 9

SUBSTRATE PREPARATION

Remove debris, old or failed sealant from joints, clean up the injection holes by using a blower and then flush out with water. If application is over a joint, remove all old or failed sealant, then clean up and flush the joints with water.

MIXING

To prevent condensation on the liquids at the start of work, the temperature of the components should be at least as high as the ambient temperature.
All opened drums of **Contite G600** should be capped when not in use.
The below table shows the dependence of the cream & gel time on the **Contite G600** to water ratio.

Time & Foam formation Depends on the Ratio G600/Water

Ratio hydrogel /water	Cream (sec.)	Gel (sec.)	End product**
1:1	15-20	20	Exp. foam
1:5	20-25	25	Gel

G600S/Seawater (3.5% NaCl Solution)

Ratio hydrogel /water	Cream (sec.)	Gel (sec.)	End product**
1:1	30-35	35	Exp. foam
1:3	32-37	37	Gel

The times were measured at 20ºC (68ºF).
** Exp. foam: Expansive foam.

APPLICATION

<u>Injection System</u>

Drilling Injection Holes

It is recommended to use packers not surface injection ports. Surface ports do not adhere well to wet surfaces nor tolerate high pressures.
Metal & rubber packers are made to withstand high pressures up to 5,000 psi in wet & dry conditions.
Before drilling holes locate rebar.
Use a rotary hammer. The diameter shall be 13 or 16 mm. depending on the packer. Drill at 45 degrees or less to the surface toward the crack.
The drill hole depth should be to approximately the middle of the structure. Holes deeper than 45 cm are not normally required as long as adequate pressure is available. Holes should be staggered from one side of the crack to the other. The distance between drill holes

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as a rule of thumb is 30 cm. If the concrete is less than 15 cm thick drill holes straight into the face of the crack to avoid spalling.

Packer Insertion

Place the packer into the hole so that the top of the rubber sleeve is below the concrete surface.

Tap in the packer if it cannot be pushed in. Tighten as much as possible.

Flushing of Crack

In thicker walls flushing the crack first with water may aid injection. Start at the lowest packer on vertical walls or at the narrowest point of horizontal cracks.

Crack Injection

Ensure all equipment is dry. Active water flow at a high rate is best stopped by **Contite G600**. Start at the highest point of resistance normally the lowest point on a vertical crack & the narrowest on a horizontal.

Monitor the pressure level. If free flow of resin is apparent at the cracks surface pause for a few minutes. The resin should heal the crack so as to contain the material. Restart pumping after 3-5 minutes. If resin continues to flow from the crack stop pumping & apply a surface seal with a rapid setting cement or oakum/foam rubber soaked in reactive material jam into place, allow a few minutes to cure & start pumping again.

Wide cracks should have surface seals to contain the resin. Under normal conditions with active leaks the following should be observed (in this order).

a) Water displaced from the crack

b) Water & resin mix appearing at the crack (foamy)

c) Pure resin from the crack

Continue pumping until resin is observed oozing from the next packer. Shut off the resin flow disconnect the pressure line & proceed to the next packer. After injecting several packers disconnect & return to the first packer & inject again.

Joint & Wide Cracks Sealing by Oakum Technique

Leaking expansion joints, wide cold joints, and extra wide moving cracks may be sealed using **Contite G600.**

Contite G600 is especially effective to repair failed waterstops the expansion of **Contite G600** allows it to stay in compression ensuring no bond failures. Outer confinement can be the soil or waterstop, inner temporarily by a backer rod or hydraulic cement.

Alternatively use strips of oakum, foam rubber or other absorbent material soaked in resin & packed into the joint/recess. If water flow is at a very high-rate small diameter pipes may be inserted in the packing material which serve to relieve pressure & divert flow away while the packing material cures. Once cured inject resin into the pipe to seal it, the pipe can then be removed.

The reactivity with water of **Contite G600** can be used in the activated oakum technique where oakum or any other kind of carrier material is soaked in **pure Contite G600**

The oakum and the **Contite G600** are applied into any void where small water leakages can be a problem (pipe outlet through walls etc.)

The foaming capability of **Contite G600** in combination with a good flexibility of the end product as well as a good adhesion to the substrate is used for expansion joints. The ratio to be used of **Contite G600** to water is 1:1.

Soil / Dust Stabilization

Contite G600 sprayed in light concentrations with water can be used for stabilization of soils, sand dunes, stockpiles, etc. Either injection method can also be used wherever applicable. Generally, the ratio to be used of **Contite G600** : Water can be 1:1 to 1:5.

Backfill Grout or Membrane Forming

The high reactivity in combination with the water solubility of **Contite G600** is used for shutting off heavy water leakages (up to 5 m^3 (176 ft^3) per minute). The ratio to be used is 1:1 or pure resin.

The low viscosity of the water/polymer mixture allows it to be used as a liquid, but solidifying gel membrane applied to the positive side of a concrete structure from the negative side, the maximum ratio to be used of **Contite G600** to water is 1:5. The gel mixture will fill the voids behind the wall to stop water.

The procedure is drill through the wall and pump the **Contite G600** - water mixture via packers.

Contite G600 to be used in masonry walls as a vertical barrier to fill the voids/joints to stop water coming through to the surface of the wall. The ratio to be used of **Contite G600** to water is 1:5.

The procedure is drill holes to 80% of the wall thickness or until 5 cm (2 in.) from the back of the wall and pump the **Contite G600** water mixture via packers into the wall.

The low viscosity in combination with a good adhesion allows **Contite G600** to be used for the gel encapsulation method where voids are filled with a gelly material (e.g. delaminated concrete slabs etc.). The ratio to be used of **Contite G600** to water is 1:5.

Reinjectable Hoses

The low viscosity of **Contite G600** makes it perfect for use in conjunction with reinjectable hoses, immediate waterproofing or for later waterproofing; the ratio to be used of **Contite G600** to water is 1:5. See **Contite Injection Hoses**.

Note :

Depending on the situation **Contite G600** can be pumped by the use of a single component injection pump equipped for higher pressures to withstand the water pressure or in cases where water is used as the second component **Contite G600** should be pumped with a two-component injection pump.

After the injection is completed flush the mixing head with water first and then with **Contite Purge**.

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a) To check the reaction, we advise free foaming conditions.
100 parts by weight **Contite G600** x parts by weight water (see the table in mixing section as a guideline)
Add water according to the above to the **Contite G600** and mix.

b) To measure the cream, the gel and the rise use the following procedure.
- The start time (point 0) is the time after the water is added and mixing starts.
- The cream time is the time at which the mix starts foaming.
- The gel time is the time the material is no longer able to flow.
- The rise time is the time where no further expansion is noted.

c) **Contite G600** only needs water:
- To achieve the final product like foam or gel.
- To control the reaction speed.

PACKAGING

Contite G600: 10 kg, 20 kg in a steel pail and 210 kg in steel drum. Other packaging units on request.

STORAGE & SHELF LIFE

Contite G600 is very stable when properly handled. To avoid problems, it is very important to understand that these materials are both temperature and moisture sensitive. Therefore, materials should be stored in an area with temperatures not exceeding 35ºC (95ºF) or not lower than 5ºC (41ºF), the shelf life is approximately 9 months in unopened drums. All part used drums should be re-sealed to prevent the ingress of moisture.

HEALTH & SAFETY

Ordinary hygienic principles, such as washing the compounds from the hands before eating or smoking should be observed. Hands should be washed with a waterless cleaner followed by soap and water. Avoid breathing of vapours, prolonged contact with the skin, contact with open breaks in the skin, and ingestion. Use **Contite G600** with adequate ventilation.

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Conpatch ® 600MCI

ONE PART POLYMER MODIFIED STRUCTURAL REPAIR MORTAR INCORPORATING A CORROSION INHIBITOR

DESCRIPTION

A ready to use low shrinkage economical one component polymer modified structural repair mortar containing fibres and silica fume. **Conpatch 600MCI** contains specially selected materials to provide a fine, smooth repair material and a corrosion inhibitor to protect reinforcement.
Conpatch 600MCI is developed with an integral corrosion inhibitor that migrates through the concrete to form a passive layer on the reinforcement providing additional protection from chlorides and other salts.
Conpatch 600MCI is suitable for structural repairs in buildings, marine structures, bridges and other infrastructure. It is suitable for structural strengthening and preserving/restoring passivity according to EN 1504-9.
Complies to EN1504 part 9 and EN1504 Part 3 class R4 and Part 4.

- Principle 3 : Concrete Restoration (CR).
  Method 3.1 - Applying mortar by hand.
  Method 3.3 – Spraying concrete or mortar.
- Principle 4 : structural strengthening (SS).
  Method 4.4 – Adding mortar or concrete.
- Principle 5 – Increase in physical resistance (PR).
  Method 5.3 – Adding mortar or concrete.
- Principle 7 : Preserving or restoring passivity (RP).
  Method 7.1 – Increasing cover to reinforcement with additional concrete or mortar.
  Method 7.2 – Replacing contaminated or carbonated concrete.

USES & ADVANTAGES

Conpatch 600MCI is a fine, ready to use repair mortar for repairing concrete surfaces including small honey-combs, surface defects, blowholes and minor damage. It can also be used to repair corrosive damage to concrete surfaces.
Advantages include:-

- Structural repair mortar.
- Easy to apply. Excellent workability.
- Non shrink. Non toxic. Non corrosive.
- Water & weatherproof.
- Reduces carbonation significantly.
- Excellent adhesion and mechanical strengths.
- Contains no chlorides or salts that may cause corrosion.
- Suitable for hand and machine application.
- Good colour matching to concrete.
- Good resistance to chlorides & sulphates.
- Contains fibres to reduce micro cracking and improve durability.
- Provides effective protection to reinforcement by the incorporation of a corrosion inhibitor.
- Long term rebar protection.
- Provide 3 times rebar life extension.

PROPERTIES AND COMPLIANCE

Appearance:	Grey powder	
Compressive Strength:	1 Days	$\geq$ 25 N/mm^2
	7 Days	$\geq$ 40 N/mm^2
ASTM C109 at 25ºC	28 Days	$\geq$ 50 N/mm^2
Bond Strength to Concrete:	$\geq$ 2 N/mm^2 (Concrete failure)	
ASTM D4541	after 28 days at 25ºC	
Pot life:	30-40 min @ 25ºC	

Rapid Chloride Penetration : < 1000 coulombs
ASTM C1202
Note: *Properties depend on water content and are typical under laboratory conditions.*

SUBSTRATE PREPARATION

The substrate should be clean & sound. Remove dirt, dust, oil, grease, laitance, sealers, release agents, curing compounds & paints.
Exposed rebar should be cleaned & protected with **Congard Zinc** or **Congard ST.**
The concrete should be presaturated for preferably 6 hours with water before application.
Substrate temperature : +5ºC min +35ºC max.
Ambient temperature : +5ºC min +35ºC max.

PRIMING

Priming is not normally required. Surfaces to receive **Conpatch 600MCI** should be well saturated with water first.

MIXING

Conpatch 600MCI is simply mixed with water to yield a stiff easily workable compound with shrinkage compensating properties.
The quantity of water depends on the desired consistency but as a guide we recommend 16-18% by weight of **Conpatch 600MCI**.
Mix with a paddle mixer or trowel for at least 3 minutes to ensure a homogenous lump free material is achieved.
Do not try to remix the product after losing workability by the addition of more water.

Typical System for Concrete Repair Using Conpatch Repair Mortars

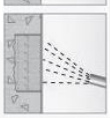
Remove damaged concrete and prepare exposed steel reinforcement.

Thoroughly clean area of repair using high pressure water jet to remove all loose debris and contamination. Fingers should be able to be fitted behind rebar.

Mix and apply **Congard Zinc** or **Congard ST** to rebar allow to dry. Apply **Cormix Latex** or **Condur EA2** bonding bridge if required. Apply repair material WET ON WET to bonding bridge.

Replace damaged concrete using **Conpatch 600MCI** one component polymer modified mortar, build up in layers if necessary.

Once set firm, the repair and surrounding area coat with **Corcure 90** or **Corcure 75** curing compound.



Remove any remaining **Corcure 90** from treated area if to overcoat.

Conpatch ® 600MCI

ONE PART POLYMER MODIFIED STRUCTURAL REPAIR MORTAR INCORPORATING A CORROSION INHIBITOR

Any further leveling may be achieved with fairing material. A final coat of **Elastoclad** decorative elastomeric, anti-carbonation coating will prevent the ingress of water chlorides and other aggressive influences, effectively halting the carbonation process. **Elastoclad** is water vapour permeable, allowing the substrate to breathe, and has excellent elasticity, bridging dynamically moving cracks even at low temperatures.

METHOD OF USE

Apply **Conpatch 600MCI** with a trowel, spatula, float or by spray. By hand press hard. Work up to 20 mm. in one layer. Thicker repairs may be achieved by working in layers.

CURING

To prevent rapid surface drying and crazing, use a suitable curing compound from Cormix's **Corcure** range e.g. **Corcure 90.**

CONSUMPTION

Approx. 2 kg/m^2/mm.

PACKAGING

25 kg. 4 ply plastic lined bags.

STORAGE & SHELF LIFE

Conpatch 600MCI has a shelf-life of up to 12 months in unopened packs kept in a dry store. If high humidity is apparent the life may be reduced to 6-8 months.

HEALTH & SAFETY

Conpatch 600MCI is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Conpatch 600MCI** is non-flammable.

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Contite ® Waterstop

HYDROPHILIC CONSTRUCTION JOINT WATERSTOP

DESCRIPTION

A flexible hydrophilic natural rubber & bentonite waterstop for construction joints and sealing precast elements that expands on contact with water.
The bentonite in **Contite Waterstop** consists of tightly packed charged microscopic platelets, between and within these platelets there is a separation of charges positive and negative. Water molecules are attracted to the unique structure of positive and negative charges and wedge themselves between the platelets causing them to separate & swell. The hydrated bentonite forms a seal preventing further migration of water. As hydrostatic pressure is increased the platelets compact forming a tighter seal.

USES & ADVANTAGES

Contite Waterstop is used to stop water infiltration through both vertical and horizontal non moving construction joints, irregular surfaces and around penetrations through concrete. It is not intended as an expansion joint sealant. It is designed to replace conventional waterstops in construction joints. The sodium bentonite in **Contite Waterstop** is the key to its success. Bentonite swells and is released (free expansion) when in contact with water blocking pores, capillaries, minor cracks & other paths for water forming a permanent impermeable barrier.

Typical areas of application include:-
Below and above grade structures such as water tanks, waste water treatment plants, tunnels, basements, lift shafts, underground stations, subway systems, man-holes, culverts, reservoirs, potable water treatment plants, swimming pools, canals etc.

Advantages Include:-

- Light weight flexible coils easy to install.
- Eliminates seam welding & split forming associated with PVC/rubber waterbars.
- Butt end joining, continuous waterstop.
- Withstands hydrostatic water head up to 70 metres.
- Forms a positive seal, sealing cracks & small voids.
- May use in potable water tanks. Non toxic.
- Can apply to irregular concrete surfaces. No need to level.
- Compressible and malleable allowing for good contact in precast applications.
- Unaffected by repeated wetting & drying cycles.
- Does not deteriorate lasts life of structure.
- Fast installation.
- Permanently active system.
- Self healing.

TYPICALS PROPERTIES

Complies to REACH Regulations as per Article 33(1), EC 1907/2006

Hydrostatic Head Resistance :	> 70 m
S.G. :	1.6-1.7 ASTM D-71
Wet / Dry Cycling :	No effect
Service Temperatures :	-40ºC to 80ºC
Elongation :	>300%
Colour :	Black
Adhesion to Clean Dry Concrete :	Excellent
Penetration Cone :	40±5 ASTM D-217
Typical Expansion :	>300%
Volatile Matter :	1% max. ASTM D-6
Application Temp. Range :	-23ºC to 52ºC
Service Temp. Range :	-34ºC to 82ºC

Note*

- *Swelling rates 100% indicates original size.*
- *Expansion is related to the quality of water, pH, temperatures, age of material and storage conditions.*
- *Expansion rates vary in salt or contaminated water consult the manufacturer before use. In salt water use **Contite Waterstop S**.*
- *Expansion rate at 23ºC in potable water at 28 days. Specification shown may be changed without notice to improve the product.*
- *Properties are typical under laboratory conditions and do not constitute a specification. Field trials are recommended.*
- *Provide at least 75 mm. concrete cover. Increase cover where light weight or low strength concrete is being used.*
- *Do not use in expansion joints.*

INSTALLATION OF CONTITE WATERSTOP

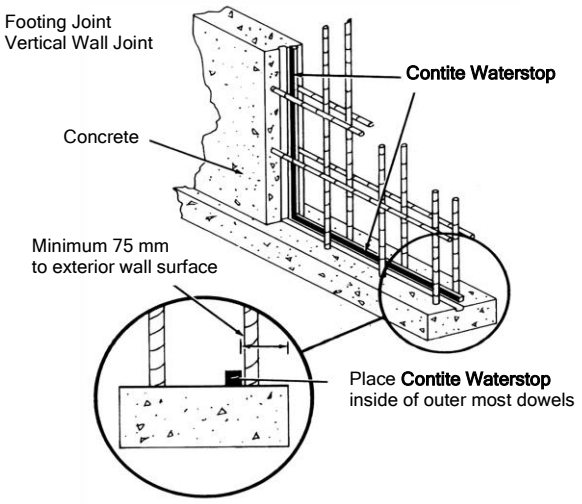
Surface Preparation
The surface should be clean, free of all curing compounds, mould oils, and dry with all dirt, aggregate, rust, debris or standing water removed.

General Installation Instructions
Apply by brush **Contite Waterstop** adhesive along the concrete by the width of **Contite Waterstop**. Whilst still tacky (within 10-15 minutes) apply the **Contite Waterstop**.
Remove the release paper and press the **Contite Waterstop** firmly to the surface for several seconds. At the highest coil end on vertical sections pay particular attention. If the adhesive has dried out reapply to the surface. Mechanical fasteners may be used in conjunction with adhesive. Tightly butt end together to form a continuous waterstop. Do not prehydrate or submerge in water. If severe ground water chemicals or salts exist consult with Cormix International Limited.
Contite Waterstop is not self adhering.

Contite ® Waterstop

HYDROPHILIC CONSTRUCTION JOINT WATERSTOP

DRAWING DETAILS

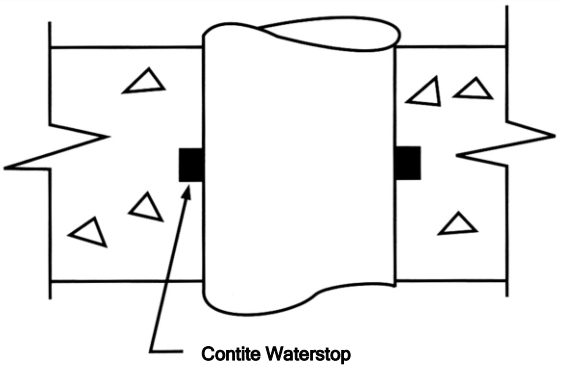


Typical placement of **Contite Waterstop** at concrete construction joints

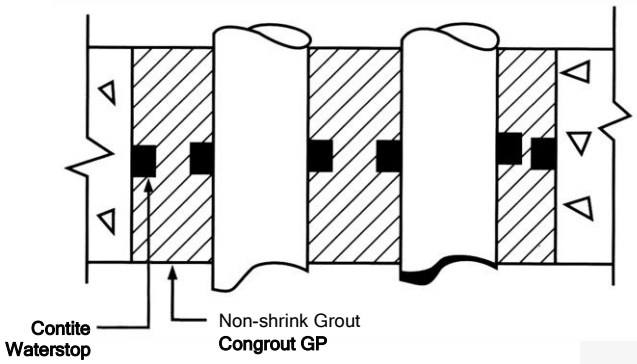
PENETRATIONS

For penetration follow the general installation procedures.

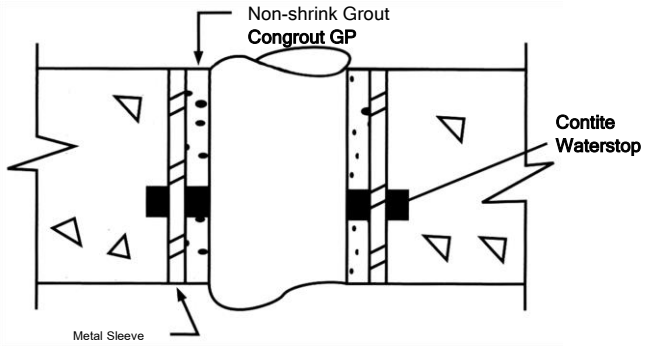
Single Pipe: Install around outer diameter of the pipe.



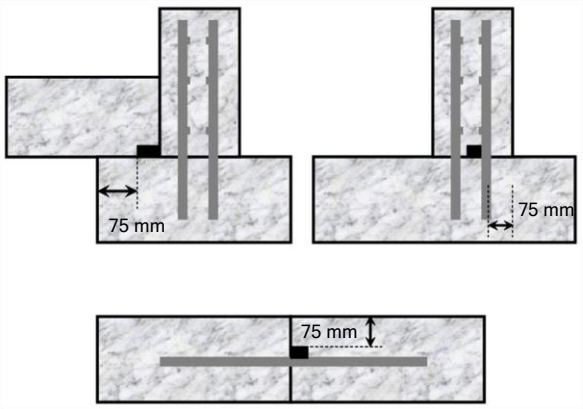
Multiple pipe: install around each pipe as well as around block out box construction.



Sleeved Pipe: Install around the outer diameter of the sleeve. Install another strip between sleeve's inner diameter & the pipe if there is an excessive gap between inner diameter of the sleeve & the pipe 2 separate waterstops may require installing one on the inner diameter & the other on the pipe. The void should be filled with **Congrout GP** non shrink cementitious grout.

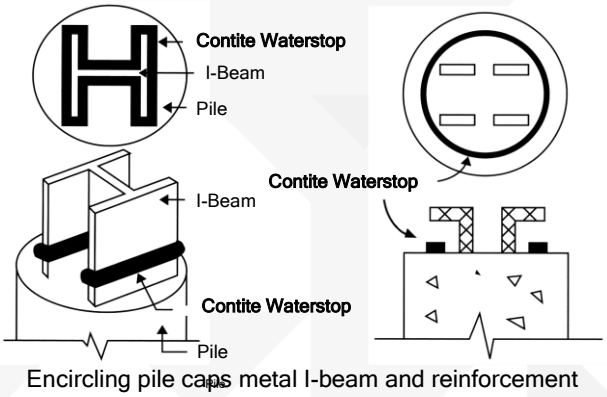


Placement of **Contite Waterstop** (25x20 mm.) at typical construction joints



75 mm minimum concrete coverage

Pile Caps & Grade Beams: Follow the general instructions above. Install to all construction joints around or adjacent to pile caps & grade beams. Install **Contite Waterstop** around pile caps and grade beams above waterproofing.
Wrap around all I-beams extending out of pile cap & encircle reinforcement out of pile cap.

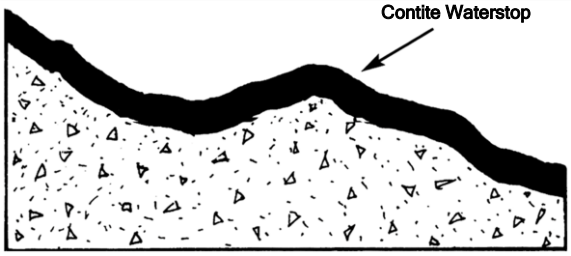


Encircling pile caps metal I-beam and reinforcement

Contite ® Waterstop

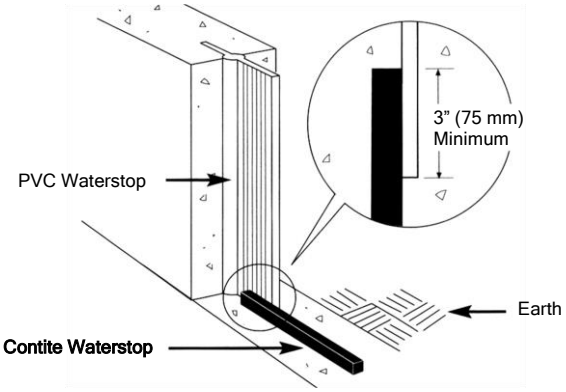
HYDROPHILIC CONSTRUCTION JOINT WATERSTOP

Irregular Concrete Surfaces: Follow general instructions above. Press **Contite Waterstop** against irregular contours filling cavities and cracks do not leave gaps between water bar and surface. It may prove necessary to install in an irregular direction to avoid major depressions or cracks.



Contour Concrete

Joining to PVC Waterstop: Follow general instructions above. Install **Contite Waterstop** on the interior side of the PVC water bar place in direct contact and overlap the PVC water bar by at least 7.5 cm.
For detailed drawings and for conditions not shown below contact Cormix International Limited.



Contite Waterstop Delay Coating
If rain is anticipated before the pouring of concrete **Contite Waterstop** may be protected by **Contite Waterstop Delay Coating**. The delay coating is applied to the surface of **Contite Waterstop** either by brush or spray and will delay swelling for up to several days.

SPECIFICATION

The waterstop to be used in all construction joints shall be **Contite Waterstop** or equal approved material. The waterstop shall consist of sodium bentonite in natural rubber and expand by at least 300%. It shall be capable of being butt ended, shall not be overlapped nor create a packing effect in the concrete, it shall be pliable so that it follows the contours of the concrete and may be installed to all penetrations. The material will form a positive seal, and a continuous waterstop withstanding hydrostatic pressure up to 70 m.

STORAGE & SHELF LIFE

Store dry in original boxes undercover protected from direct sunlight and rain. Do not store at very high temperatures for long periods of time. The shelf life is at least 6 months when stored below 30ºC.

PACKAGING & SIZES

Approximate size :-
25 x 20 mm. x 5.0 LM
6 rolls per carton.
Other sizes available on request.
Primer / Adhesive : 5 litre plastic pails
1 litre per 25-35 LM of standard profile 25x20 mm.
Delay Coating : 5 litre plastic pails
1 litre per 10-12 LM of standard profile 25x20 mm.

HEALTH & SAFETY

There are no known hazards associated with **Contite Waterstop** during normal use. Refer to product material safety data sheet.

LIMITATIONS

Contite Waterstop should only be used in applications where ground water is not contaminated.
In areas where saltwater or organic contaminated water is expected contact Cormix International Limited. for recommendations.
Contite Waterstop should be used in areas fully confined in concrete by a minimum of 75 mm cover. To achieve success the installation instructions must be followed. Any hydrated material allow to dry before placement of concrete.

TECHNICAL SERVICE

The Cormix International Limited 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: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

COMPLIANCE

In compliance with the directive 89/106/EEC of the council of European communities of 21 December 1988.

CONTACT DETAILS

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Contite ® HPWM

WATERPROOFING MEMBRANE FOR UNDERGROUND STRUCTURES

DESCRIPTION

Contite HPWM is a single component high performance flexible waterproofing membrane based on EVA for the protection of various structures including tunnels, underground stations, shafts, caverns, etc.

Complies to EN1504 Part 9 and EN1504 Part 2
- Principle 1 : Protection Against Ingress (PI).
  Method 1.3 – Surface Coating.
  Method 1.8 – Application of Membranes.
- Principle 2 : Moisture Control. (MC)
  Method 2.3 – Surface Coating.
- Principle 8 : Increasing Resistivity (IR).
  Method 8.3 – Overlays or Coatings.

USES & ADVANTAGES

Contite HPWM may be applied to number of substrates and especially where sandwiched between two layers of structural concrete including:
- Basements
- Shotcrete tunnel and cavern linings
- Diaphragm wall and piles
- Mining.
- Water retaining structures

Advantages include:-
- Protecting concrete against aggressive ground waters.
- Very easy to install in big areas by spray especially to difficult surfaces.
- No fixing or anchoring required as spray applied
- No seams or joints.
- Very fast curing time from 2-3 hours depending on temperatures and humidity.
- Can be applied over concrete within 24 hours unlike other conventional waterproofers that require 28 days & dry surface.
- Excellent crack bridging properties and elongation.
- Connect to other waterproofing systems easily.
- No undercutting, easy to repair and difficult to damage.
- Fully bonded.
- Can overcoat within 24 hours. Excellent adhesion to concrete and steel.
- Hard wearing suitable for application over shotcrete containing steel fibres.
- Non flammable.
- Resistant to salt bearing ground waters.
- Chemical resistant.
- Life of material permanent when sandwiched between concrete linings.

Advantages over sheet membrane:-
- Easy to handle and apply over various complex shapes/areas without any problem.
- Rate of application is higher and quick as mentioned below :
  - Approx. 45 – 95 m^2/hr with the use of approx. 3 workers.
  - Approx. 160-170 m^2/hr with the use of robotic equipment and spray application.
- Spray application can be done continuously and consistently without the need to use any waterstops in between the section nor division of sections is required.
- Rock bolts/anchor bolts used in tunnels can be easily coated & protected from corrosion by spray application.

PROPERTIES

Appearance:	Light grey & orange powder (other colours available)
SG:	Approx.550-650 gm/litre
Application Thickness:	2-6 mm
Elongation: ASTM D412	≥150%
Waterproof Penetration: BS EN 12390-8:2000	Zero
Bond strength to Concrete: BS EN ISO 4624:2003/ASTM D4541	>1.5N/mm^2
Bond Strength to Steel: BS EN ISO 4624:2003/ASTM D4541	>2Nmm^2
Crack Bridging Ability:	>2.5 mm when applied at correct thickness BS EN 1062-7; 2004 Class A
Water Content:	35 to 55 % by weight
Non Flammable: BS EN ISO 13501-1 BS EN ISO 11925-2	Class E.
Chemical Resistance:	Complies with BSEN 14414 Method A
Resistance to Leaching:	Complies with BSEN 14415 Method A & B
Fire Resistance: BS EN ISO 11925-2	Non ignitable

Test results above are based on Laboratory conditions.

COVERAGE RATE

Approx. 1.2 kg – 3.6 kg /m^2 for 2 - 6 mm thickness. Apply in multiple layers up to a max of 2 mm per layer may build up to 6 mm.

SUBSTRATE PREPARATION

Ensure the surfaces to be coated are clean and sound, free from dust, laitance, curing compounds, grease, dirt, oil or other surface contaminants
Repair damaged surfaces or honey combed concrete with **Conpatch 600MCI** or other appropriate repair material from Cormix.
Surfaces should be damp, porous surfaces saturated before application, do not have running or standing water present.
In the case of cracks consult Cormix for treatment methodology.
Static cracks can be routed out and repaired with **Conpatch 600MCI** or **Contite Seal Mortar** Moving cracks should be treated via injection with **Contite PUE200/E201** polyurethane resin.
If water is running either drain away or plug using a suitable product from Cormix.

Contite ® HPWM

WATERPROOFING MEMBRANE FOR UNDERGROUND STRUCTURES

APPLICATION

Contite HPWM can be applied using a Robotic Spray Equipment such as Rotor Shotcreting Machine along with compressed air setup to feed the **Contite HPWM** through a Hose with 32 mm diameter, whereas water is mixed with **Contite HPWM** at the Nozzle.

The equipment details required are as mentioned below:

SHOTCRETE MACHINE

- Rotor shotcreting machine with rotor having 12 round holes. Each round hole is 90 mm high.
- The base of rotor with 90 mm coupling.
- The dust collector of rotor with 90 mm high coupling.
- The diameter of spraying nozzle = 32 mm, with approximately 16 to 18 water ring holes.
- The diameter of spraying hose = 32 mm.

Water Additions

Contite HPWM can be sprayed by adding water at the nozzle. The water additions should be between 35% to 55% by weight.

QUALITY CONTROL

Quality Control for checking thickness of applied membrane can be done as below :

1) Using wet film depth gauge, regular checking of wet film thickness can be done for applied membrane at various spots.
2) After application: cut out small patches of membrane in the form of square (5 x 5 cm) & check for thickness.

CURING

The material is tack free in 2-3 hours.
It may be over coated after 24 hours with concrete / shotcrete.

CLEANING

The Spray Equipment & the product carrying lines should be cleaned using Compressed air.
The Nozzle should be cleaned with water.

PACKAGING

15 KG bag or according to customer requirements.

STORAGE & SHELFLIFE

The shelf life is 12 months if unopened, stored free from frost, moisture and direct sunlight.

HEALTH & SAFETY

Contite HPWM is non-toxic but is alkaline in its nature. When applying gloves & goggles should be worn. Wash off splashes to skin with water. If in eyes wash out with plenty of clean water and seek medical attention. **Contite HPWM** is non-flammable. MSDS is available from Cormix.

TECHNICAL SERVICE

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QUALITY ASSURANCE

ISO 9001: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc. Cormix does not take responsibility nor need to defend others testing that does not achieve the published data. The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product. Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Constrip ® SRG

CONCRETE SURFACE RETARDER GEL

DESCRIPTION

Constrip SRG is a surface retarder gel used to expose aggregate on formed portland cement based surfaces.
Constrip SRG produces decorative and architectural finishes showing the colour and texture of natural aggregate.
Constrip SRG is designed for face down work or for application to vertical forms.

USES & ADVANTAGES

Constrip SRG is used to produce exposed aggregate finishes on face down & vertical applications.

Advantages include:-

- A uniform depth of retardation.
- Treated surfaces give excellent bond for construction joints, stop ends or renderings.
- Can retard the set of the cement paste up to 8 mm. depending on thickness of coating and concrete mix design.
- Economical and simple method of revealing concrete surfaces, no need for costly chipping or scabbling.
- Does not reduce concrete strengths.
- Uniform results.
- No additional form release agent is required.
- Use for precast panels, walls and vertical construction joints.

PROPERTIES

Appearance:	Brown type gel
Specific Gravity:	Approx. 1.07 kg/litre

SUBSTRATE PREPARATION

Ensure that all mould surfaces are dry clean and free from scale, oil, grease and concrete build up etc.

APPLICATION

Constrip SRG is ready to use from the container, it should be stirred before use, do not dilute. **Constrip SRG** may be applied to any type of clean form. Apply a heavy coat with a brush or serrated trowel. Allow to dry. (Normally 2 - 4 hours). For exposed aggregate forms should be removed as soon as possible after the concrete is poured.

A sample slab should be made to ensure that required effect is achieved.

COVERAGE RATES

Coverage rate 3-4 m^2 per kg. depending on form-work and designed retardation depth.

CLEANING

Some of the cement paste will stick to the form when the shuttering is stripped, this can be removed while still soft from both the form-work and concrete by a wire brush or high pressure water jet.

PACKAGING

Constrip SRG is supplied in 20 kg. containers.

STORAGE & SHELF LIFE

Constrip SRG should be stored in temperature range 2ºC - 50ºC. The shelf life is 12 months in original sealed containers.

HEALTH & SAFETY

Constrip SRG is classed as non hazardous. All chemical products should be used with care. Avoid contact with skin and eyes, wear protective gloves and eye protection.

TECHNICAL SERVICE

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QUALITY ASSURANCE

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Rev.009 Jun 2021

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CORMIX
One step ahead

(8.4)

Mud Products
&
Ground Improvement

The Construction Chemicals Specialist

Cormix ® Pilecon

NATURAL SODIUM BENTONITE

DESCRIPTION

Cormix Pilecon is a natural premium grade sodium bentonite ideally suited for any type of civil engineering applications and on any kind of soil. Cormix Bentonite matches API RP-13B Section & OCMA-DFCP4.

Cormix Pilecon swells up to sixteen times its volume and, after dispersion in water, shows rheologic reactions that guarantee highly colloidal suspensions which have high waterproofing and lubricating qualities.

USES & ADVANTAGES

Cormix Pilecon is suitable for use with all kinds of soil. It has high filtration properties with low sensitivity to contaminants. It is used in the construction of shafts, micro tunneling, pipe jacking, bore piling, dam grouting diaphragm wall and cavity grouting in segment tunnels.

Advantages include:-

- Reduces fluid loss and prevents water seepage into permeable formations.
- Improves bore hole cleaning.
- Transports the excavated material from the face.
- Helps to develop a layer of filter cake on the micro-tunnel front acting as a membrane and inhibiting diffusion of the suspension into ground.
- Reduces jacking force.
- Reduces friction between the pipe & soil.
- Improves the flow of excavated material through the head chamber
- Prevents ground collapsing into the annulus and causing settlement.
- Provides lubrication.
- Little loss of drilling fluids.
- Easy to mix quickly achieves maximum viscosity.

PHYSICAL PROPERTIES

TESTING	RESULT
Moisture:	Max 13%
Specific Gravity:	2.3-2.6
Bulk Density:	850 - 1050 kg/m^3
Swelling - 2 g:	>30 ml
pH at 5 % :	> 9
Bleeding after 24 hrs:	0
Plasticity limit:	80-100%
Plastic index:	> 500%
Yield Point/Plastic Viscosity Ratio :	1.10
Residue of Diameter Greater Than 75 µm:	15% Max

TYPICAL CHEMICAL COMPOSITION

SiO_2	45-55%
Fe_2O_3	4-15%
Al_2O_3	10-19%
TiO_2	0.8-2.2%
CaO	0.7-2.4%
MgO	1.9-3.6%
Na_2O	1.6-3.2%
K_2O	0.12-0.30%

APPLICATION

The primary aim of **Cormix Pilecon** slurry shall be to ensure that the slurry is capable of fulfilling functions as a retainer, sealant and to stay insular without any deleterious effects on the finished pile, wall or other form of construction.

In order to reach the best performance during the preparation of the drilling fluid, **Cormix Pilecon** must be dispersed using a turbo mixer in a proportion of 30 - 50 Kg of **Cormix Pilecon** per cubic meter of water. **Cormix Pilecon** slurry is prepared with an objective to achieve maximum hydration of the bentonite. Therefore **Cormix Pilecon** must be added to the mixing water gradually in order to ensure that all the particles are wetted and do not clump into partially hydrated lumps.

Potable quality fresh water from a mains supply should be used in the mixing process to achieve the best results. If there is any doubt about the quality of the water, a chemical treatment should be carried out using sodium bicarbonate or soda ash to control the pH before using **Cormix Pilecon**.

In addition, for economic and environmental reasons, the maximum re-use and minimum disposal of used slurry is desirable.

Cormix Pilecon slurry can be re-used provided its properties are carefully monitored and kept under control. Whatever system of excavation is used, loss of slurry will occur. Some will be excavated with the soil, some will permeate into the strata, and some will become too tainted for re-use and have to be taken off site.

Cormix ® Pilecon

NATURAL SODIUM BENTONITE

RHEOLOGICAL PROPERTIES

Specification of Bentonite slurry - Mixed at 1,500 rpm for 3 min and after 1 hr ageing at 20˚C. Concentration of 3.75% by weight for 1 Lt of Tap Water

TESTING	INSTRUMENT	STANDARD METHOD	MONITORING & ROUTINE PROCESSES	STANDARD REQUIREMENT	MEASUREMENT RESULT
Marsh funnel viscosity	Marsh cone with cup	API RP 13B Section & OCMA DFCP4	After mixing (fresh) Ready for re-use Prior to concreting	* 32- 50 Sec. * 32- 60 Sec. * 32- 50 Sec.	44 Sec. 48 Sec. 46 Sec.
Fluid density	Mud balance	API RP 13B Section & OCMA DFCP4	After mixing (fresh) Ready for re-use Prior to concreting	< 1.10 kg/m^3 < 1.25 kg/m^3 < 1.15 kg/m^3	1.02 kg/m^3 1.10 kg/m^3 1.05 kg/m^3
Filtrate loss (@ 30 min, 100 psi)	API-Filter press (LTLP)	API RP 13B Section & OCMA DFCP4	After mixing (fresh)	< 30 ml.	19.4 ml
Mud-cake thickness (@ 30 min, 100 psi)		API RP 13B Section & OCMA DFCP4	After mixing (fresh)	< 3 mm.	2.3 mm
Gel strength (10 Min.)	Shearometer kit	API RP 13B Section & OCMA DFCP4	After mixing (fresh)	4-40 N/m^2.	4.2 N/m^2
pH	pH indicator strips (Litmus paper)	API RP 13B Section & OCMA DFCP4	After mixing (fresh) Ready for re-use Prior to concreting	< 10 < 11 < 12	< 9.5 < 9.5 < 9.5
Sand content	Sand content kit	API RP 13B Section & OCMA DFCP4	After mixing (fresh) Ready for re-use Prior to concreting	< 3% < 3% < 3%	< 1% < 1% < 2%

* Or as recommended by manufacturer/distributor as well as approved by Foundation Engineer / Specialist Geotechnical Engineer

CONCENTRATION (Bentonite)	g/L	50.0	37.5	25.0
		2 Sacks	1.5 Sacks	1 Sack
Swelling Time (1 hr)				
Marsh Viscosity	Sec	67	44	37
Filtrate 7.5 min (100 psi)	mL	8.2	9.4	11.2
Filtrate 30 min (100 psi)	mL	17.8	19.4	22.4
Mud cake (thickness)	mm	2.5	2.3	1.9

PACKAGING

25 kg bags. Or 1.30 MT bags.

STORAGE & SHELF LIFE

Cormix Pilecon has a shelf life of 12 months when stored in a dry place below 35ºC in unopened condition.

HEALTH & SAFETY

Cormix Pilecon 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

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QUALITY ASSURANCE

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ISO 14001: 2015 verified by Lloyd's Register International.

Cormix ® Pilecon

NATURAL SODIUM BENTONITE

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The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Cormix ® Pilecon Super

HIGH PERFORMANCE NATURAL SODIUM BENTONITE

DESCRIPTION

Cormix Pilecon Super is a natural premium grade higher performance sodium bentonite ideally suited for any type of civil engineering applications and on any kind of soil. **Cormix Pilecon Super** performs well in variety of water qualities. **Cormix Pilecon Super** matches API RP-13B Section & OCMA-DFCP4. **Cormix Pilecon Super** swells up to sixteen times its volume and, after dispersion in water, shows rheologic reactions that guarantee highly colloidal suspensions which have high waterproofing and lubricating qualities.

USES & ADVANTAGES

Cormix Pilecon Super is suitable for use with all kinds of soil. It has high filtration properties with low sensitivity to contaminants. It is used in the construction of shafts, micro tunneling, pipe jacking, bore piling, dam grouting diaphragm wall and cavity grouting in segment tunnels.

Advantages include:-

- Reduces fluid loss and prevents water seepage into permeable formations.
- Improves bore hole cleaning.
- Transports the excavated material from the face.
- Helps to develop a layer of filter cake on the micro-tunnel front acting as a membrane and inhibiting diffusion of the suspension into ground.
- Reduces jacking force.
- Reduces friction between the pipe & soil.
- Improves the flow of excavated material through the head chamber
- Prevents ground collapsing into the annulus and causing settlement.
- Provides lubrication.
- Little loss of drilling fluids.
- Easy to mix quickly achieves maximum viscosity.

PHYSICAL PROPERTIES

TESTING	RESULT
Moisture:	Max 13%
Specific Gravity:	2.3-2.6
Bulk Density:	850 - 1050 kg/m^3
Swelling - 2 g:	>30 ml
pH at 5 % :	> 9
Bleeding after 24 hrs:	0
Plasticity limit:	80-100%
Plastic index:	> 500%
Yield Point/Plastic Viscosity Ratio:	1.10
Residue of Diameter Greater Than 75 µm:	15% Max

TYPICAL CHEMICAL COMPOSITION

SiO_2	45-55%
Fe_2O_3	4-15%
Al_2O_3	10-19%
TiO_2	0.8-2.2%
CaO	0.7-2.4%
MgO	1.9-3.6%
Na_2O	1.6-3.2%
K_2O	0.12-0.30%

APPLICATION

The primary aim of **Cormix Pilecon Super** slurry shall be to ensure that the slurry is capable of fulfilling functions as a retainer, sealant and to stay insular without any deleterious effects on the finished pile, wall or other form of construction.
In order to reach the best performance during the preparation of the drilling fluid, **Cormix Pilecon Super** must be dispersed using a turbo mixer in a proportion of 18 - 60 Kg of **Cormix Pilecon Super** per cubic meter of water. **Cormix Pilecon Super** slurry is prepared with an objective to achieve maximum hydration of the bentonite. Therefore **Cormix Pilecon Super** must be added to the mixing water gradually in order to ensure that all the particles are wetted and do not clump into partially hydrated lumps.

Cormix Pilecon Super is suitable for use with khlong water. If there is any doubt about the quality of the water, a chemical treatment should be carried out using sodium bicarbonate or soda ash to control the pH before using **Cormix Pilecon Super**.
In addition, for economic and environmental reasons, the maximum re-use and minimum disposal of used slurry is desirable.

Cormix Pilecon Super slurry can be re-used provided its properties are carefully monitored and kept under control. Whatever system of excavation is used, loss of slurry will occur. Some will be excavated with the soil, some will permeate into the strata, and some will become too tainted for re-use and have to be taken off site.

Cormix ® Pilecon Super

HIGH PERFORMANCE NATURAL SODIUM BENTONITE

RHEOLOGICAL PROPERTIES

Cormix Pilecon Super - Mixed with Khlong water at 1,500 rpm for 3 min and after 24 hr ageing at 25˚C.

TESTING	INSTRUMENT	STANDARD METHOD	STANDARD REQUIREMENT	DOSAGE	MEASUREMENT RESULT
Marsh funnel viscosity	Marsh cone with cup	API RP 13B Section & OCMA DFCP4	30 - 55 Sec	30 kg/M^3 40 Kg/M^3 50 Kg/M^3	36 Sec. 39 Sec. 43 Sec.
Fluid density	Mud balance	API RP 13B Section & OCMA DFCP4	Max 1.15 kg/m^3	30 kg/M^3 40 Kg/M^3 50 Kg/M^3	1.02 kg/m^3 1.02 kg/m^3 1.02 kg/m^3
Fluid loss (@ 30 min, 100 psi)	API-Filter press (LTLP)	API RP 13B Section & OCMA DFCP4	Max 40 ml.	30 kg/M^3 40 Kg/M^3 50 Kg/M^3	36 ml 30 ml 25 ml
Mud-cake thickness (@ 30 min, 100 psi)		API RP 13B Section & OCMA DFCP4	< 3 mm.	30 kg/M^3 40 Kg/M^3 50 Kg/M^3	2.77 mm 3.75 mm 4.54 mm
pH	pH indicator strips (Litmus paper)	API RP 13B Section & OCMA DFCP4	9.5 - 11.7	30 kg/M^3 40 Kg/M^3 50 Kg/M^3	8 - 9 8 - 9 8 - 9

PACKAGING

25 kg bags. Or 1.30 MT bags.

STORAGE & SHELF LIFE

Cormix Pilecon Super has a shelf life of 12 months when stored in a dry place below 35ºC in unopened condition.

HEALTH & SAFETY

Cormix Pilecon Super 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: 2015 verified by TUV Nord.
ISO 14001: 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.
The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

CONTACT DETAILS

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Cormix ® SCP3

A VISCOSITY ENHANCING AND CLAY STABILIZER

DESCRIPTION

Cormix SCP3 is a lubricating viscosity enhancing clay conditioning polymer powder especially formulated for ground works. It may be used in fine sand, silt or clay with high water contents.

USES & ADVANTAGES

Cormix SCP3 is used in bore pile, barrettes and diaphragm wall construction as well as with TBM excavation.
Other applications include pipe jacking, HDD and drilling wells.
It is recommended for use with high permeability soil.
Advantages include:-.

- Reduces disposal costs compared to Bentonite.
- Environmentally friendly.
- Stabilizes plastic clay soils.
- Degradable no bacteria growth.
- Economical in both fresh and brackish water.
- Reduces clay sticking.
- Good stabilization of excavations.
- Use with soil conditioning foams from Cormix.
- Pile open time extended.
- Smaller site foot print.
- Shorter mobilizations.
- Suitable for all types of soil.
- Reduces filtrate loss.
- Low dosage, low cost replaces bentonite.
- Builds sands, encapsulates clay, shale prevents slaking.

PROPERTIES

Appearance: White Powder
Bulk Density: 1.00 - 1.20 kg/litre
TAP Density Tester : TAP-2SP
pH (0.1% Solution) : 8.0 - 10.0
Flash Point: Not applicable
Chloride Content: Nil

MIXING

Cormix SCP3 powder is mixed with water in a mixing tank by paddle mixer for uniform dispersion before introducing into the clay or soil.
Tank Mixing
Add **Cormix SCP3** slowly into a rapid, turbulent stream of water as filling the tank.Start mixing with paddles for 5 - 15 minutes depending on dosage used.
Avoid use of shear mixers or centrifugal pumps. Over shearing may entrain air. Pour polymer fluid directly into the bore hole at the most unstable or high permeability zone where pressure differences in the soil is expected due to the movement of water at the time of drilling process. The auger should be raised up and down slowly into the slurry column. Slow rotation may enhance distribution.
In general 0.3 kg of **Cormix SCP3** per cubic meter of water is used as a starting point for soil conditioning. This dosage may be changed to suit local ground conditions.

APPLICATION & TESTING

Cormix SCP3 can be used with various systems including bore pile construction, auger drilling and with TBMs.
Cormix SCP3 provides a better polymer free slurry suitable for bore hole stabilization with less interface contamination i.e. the slurry to metal and slurry to soil.
Cormix SCP3 also provides high cohesion for binding sand and gravels together to allow easy excavation and bore stabilization.
Testing of the slurry should be carried out before use. Test pH, marsh funnel viscosity, density and sand content. Consult Cormix for advise.

TESTING EQUIPMENT

Marsh Funnel Viscometer
Weighing Balance
pH Paper
Mud Balance
Fluid Sampler
Filter press

DOSAGE

Dosages vary from 0.3 -2 kg/m^3 of water.

Type of sub-soil condition	Concentration (kg/m^3)
Clay / Silty / Fine & Medium sands	0.3-0.7
Coarse sand & Gravel	0.8-1.5
Cobbles & Rocks	1.6-2.0

PACKAGING

25 Kg Bags.

STORAGE & SHELF LIFE

Store **Cormix SCP3** between above 5ºC and below 40ºC. The shelf life when stored in unopened original containers is 12 months.

HEALTH & SAFETY

Cormix SCP3 is formulated from chemicals which present no fire or health hazards. However, if it is spilt, the floor will be made slippery and should be washed down immediately with cold water.
For further information contact Cormix.

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 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

CONTACT DETAILS

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Cormix ® SCP4

A NEW GENERATION VISCOSITY ENHANCING AND CLAY STABILIZER POLYMER

DESCRIPTION

Cormix SCP4 is a blend of synthetic lubricating viscosity enhancing clay conditioning polymer additive used with bentonite. It is especially formulated for ground works. It may be used in fine sand, silt or clay with high water contents.

USES & ADVANTAGES

Cormix SCP4 is used in bore pile, barrettes and diaphragm wall construction as well as with TBM excavation as pure polymer drilling fluid system without bentonite slurry.
Other applications include pipe jacking, HDD and drilling wells.
It is recommended for use with high permeability soil.
Advantages include: -.

- Reduces disposal costs compared to Bentonite.
- Environmentally friendly.
- Stabilizes plastic clay soils.
- Degradable no bacteria growth.
- Reduces clay sticking.
- Good stabilization of excavations.
- Suitable for all types of soil.
- Pile open time extended.
- Smaller site footprint.
- Shorter mobilizations.
- Creates thin filter cake at the sand layer.
- Reduces filtrate loss.
- Low dosage
- Builds sands, encapsulates clay, prevents shale slaking.

PROPERTIES

Appearance:	Light brown Powder
Bulk Density:	0.70 - 0.90 kg/litre
pH (0.1% Solution) :	7.0 - 8.0
Flash Point:	Not applicable
Chloride Content:	Nil

MIXING

Cormix SCP4 powder is mixed with water in a mixing tank by paddle mixer for uniform dispersion before introducing into the clay or soil.
Tank Mixing
Add **Cormix SCP4** slowly into a rapid, turbulent stream of water as filling the tank. Start mixing with paddles for 5 - 15 minutes depending on dosage used.
Avoid use of shear mixers or centrifugal pumps.
Over shearing may entrain air. Pour polymer fluid directly into the bore hole at the most unstable or high permeability zone where pressure differences in the soil is expected due to the movement of water at the time of drilling process. The auger should be raised up and down slowly into the slurry column. Slow rotation may enhance distribution.
In general 0.5 kg of **Cormix SCP4** per cubic meter of water is used as a starting point for soil conditioning. This dosage may be changed to suit local ground conditions.

APPLICATION & TESTING

Cormix SCP4 can be used with various systems including bore pile construction, auger drilling and with TBMs.
Cormix SCP4 provides a better polymer free slurry suitable for bore hole stabilization with less interface contamination ie the slurry to metal and slurry to soil.
Cormix SCP4 also provides high cohesion for binding sand and gravels together to allow easy excavation and bore stabilization.
Testing of the slurry should be carried out before use. Test pH, marsh funnel viscosity, density, filtrate loss and sand content. Consult Cormix for advise.

TESTING EQUIPMENT

Marsh Funnel Viscometer
Weighing Balance
pH Paper
Mud Balance
Fluid Sampler
Filter Press

DOSAGE

Dosages vary from 0.5 -2 kg/m^3 of water.

Type of sub-soil condition	Concentration (kg/m^3)
Clay / Silty / Fine & Medium sands	0.5-0.7
Coarse sand & Gravel	0.8-1.5
Cobbles & Rocks	1.6-2.0

PACKAGING

15 kg bags.

STORAGE & SHELF LIFE

Store **Cormix SCP4** between above 5ºC and below 40ºC. The shelf life when stored in unopened original containers is 12 months.

HEALTH & SAFETY

Cormix SCP4 is formulated from chemicals which present no fire or health hazards. However, if it is spilt, the floor will be made slippery and should be washed down immediately with cold water.
For further information contact Cormix.

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 : 2015 verified by TUV Nord.
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