



STERLING TechnoSeal® CrystalFlex-2C

TECHNOTRADE Surface Applied Dual-Crystallization Waterproofing Slurry System

Description:

TechnoSeal®CrystalFlex-2C is a dual-crystallization waterproofing slurry system with excellent capillary sealing properties specially designed for watertight Concrete structure for both positive and negative side contains a modified, chloride-free mineral cement-based powder, crystallising, capillary-plugging additives and a formulated styrene-butadiene dispersion liquid.

When TechnoSeal®CrystalFlex-2C mixed both components together and applied to the surface of concrete or mortar, an insoluble crystals are formed and developed in the water-bearing capillaries, effectively blocking the passage of water and ensuring permanent water tightness throughout the life of the structure and leaves a coating with excellent pressure- and abrasion resistance and has excellent resistance to chemical compounds

Area of Application:

- Concrete foundations, walls, and slabs on grade.
- Marine structures.
- Elevator pits and equipment pits.
- Parking structures.
- Swimming pools and water features.
- Water towers, reservoirs and storage tanks.
- Tunnels, pipes and underground vaults.
- Water treatment reservoirs.
- Bridge decks, elevated slabs and ramps.

And protecting against water ingress in

- Basements
- Tunnels
- Foundations
- Retaining walls
- Lift shafts
- Construction joints
- Bridge decks
- Jetties

Features:

- Impregnates into the substrate
- Flexible
- Self-curing
- Self-healing
- Stable pH
- Breathable
- Impermeable to pressurized water

Typical Properties at 25°C:

Pot Life	45 Minutes	Drying Time	12 Hours
Appearance Component A Powder	Cementitious Grey		
Appearance Component B Liquid	Milky white		
Bulk Density Component A Powder (ASTM D 1895 A)	Approx. 0.85 g/cm ³		
Density Component B Liquid (ASTM D 1475)	Approx. 1.0 g/cm ³		
Water Vapour permeability (ASTM E96)	1.83±0.05 g/m ² /day		
Mixed Density (ASTM D 1475)	1.85± 0.05		
pH	>11		
Coefficient of water vapour diffusion resistance (μ)	60		
Powder: Liquid mixing ratio by weight	3:1		
Flexural Tensile Strength (ASTM D 790)	6.4±0.4 MPa		
Adhesion to concrete (ASTM D 4541)	1.6 MPa		
Compressive Strength (ASTM C109 Modified)	50± 5 MPa		
Hydrostatic Pressure resistance (ASTM D 5385)	10 Bars		
Elongation (ASTM D 412)	Up to 15%		
Note: All data are average values obtained under laboratory conditions. In practical use temperature, humidity and absorbance of the substrate may influence the above given values.			

Direction of use:

Surface Preparation

All concrete to be treated with TechnoSeal®CrystalFlex-2C must be clean and have an "open" capillary surface. Remove laitance, dirt, grease, etc. by means of high pressure water jetting, wet sandblasting or wire brushing. Faulty concrete in the form of cracks, honeycombing, etc. must be chased out, treated with TechnoSeal®CrystalFlex-2C and filled flush with TechnoSeal®CrystalMortar. Surfaces must be carefully pre-watered prior to the TechnoSeal®CrystalFlex-2C application. The concrete surface must be damp but with no wet sheen on the surface.

Active leaks must be treated and fully stopped with TechFin® FastPlug. Leaking cracks need to be sealed with a TechnoPur® InjectoSeal range of PU Injection material. Fill all blowholes, honeycombs or other surface defects with TechnoSeal® CrystalMortar. Before the application of TechnoSeal®CrystalFlex-2C, dampen the substrate with clean water to a saturated surface dry (SSD) condition.

All surfaces to be patched, repaired or sealed with TechnoSeal® CrystalMortar must be clean and sound. Cracks should be routed out to a U-shaped configuration, approximately 20mm (3/4") wide and a minimum of 20mm (3/4") deep or to a reversed Π-shaped configuration 25x25x30 mm (1"x1"x1.2") in size.

Tie holes should be roughened prior to filling. Spalled and honeycombed areas must be thoroughly cleaned and chiseled back to sound concrete prior to repair. Remove all dirt, cement laitance, form release agents, curing compounds, paints, coatings, etc. by means of wet or dry sandblasting, high pressure water jet or other suitable mechanical means. Surfaces must be well moistened to a dull dampness at the time of application. The concrete should be damp with no standing water wet sheen on the surface prior to TechnoSeal® CrystalMortar application.

Application:

For Cracks & Strip Seal

After proper surface preparation and routing to appropriate configuration, prime the areas to be patched or repaired with a slurry coat of TechnoSeal@CrystalFlex-2C and 10mm (2/5") around the area while primer slurry in tacky or green stage, fill cavity flush to surface with TechnoSeal@CrystalMortar in mortar consistency.

For Spalled and honeycombed areas

Prepare the surface and chisel back up to sound concrete. Apply a coat of TechnoSeal@CrystalFlex-2C slurry as a primer coat in the prepared sound concrete surface need to be repaired while still in green "tacky" stage apply TechnoSeal@CrystalMortar in layers of 13mm (1/2") thick until required thickness is obtained.

Each layer should be allowed to set long enough that it will leave only a slight indent approximately 1.6mm (1/16") when pressed with a finger. Where possible, the surface of the repair should be packed and hold tightly using a block of wood.

For Tie holes and pointing applications

Prepare the surface and chisel back up to sound concrete. Apply a coat of TechnoSeal@CrystalFlex-2C slurry as a primer coat in the prepared sound concrete surface need to be repaired while still in green "tacky" stage apply TechnoSeal@CrystalMortar in "dry earth" consistency. TechnoSeal@CrystalMortar should be tightly rodded into tie holes or packed and hold tightly using a block of wood.

Note: For all applications, TechnoSeal@CrystalFlex-2C should be applied as a surface treatment as soon as TechnoSeal@CrystalMortar has set (approximately 1-2 hours). If this is not practical, leave surface rough for subsequent surface treatment to bond.

For Waterproofing Brush Application

- Apply the first coat using Grade 1. Brush (35 no) or roller.
- Second coat to be applied perpendicular to the first coat and 6-8 hours after the first coat.
- Similarly, the application of the third coat needs to be undertaken, if required.
- Application is done in 2-3 coats, depending on the area of application.
- All below ground and water retaining bodies should be treated with additional third coat.
- Thickness will vary from 700 microns to 1.5mm depending on the number of coats.

For Waterproofing Spray Application

Use suitable spray machines which can easily pump and spray the liquid and paste-like products. Prepare the product as described for the brush application. Fill the product into the feed hopper of the spray machine and spray continuously. The whole specified amount of TechnoSeal@CrystalFlex-2C may be applied in one lift. Otherwise spray in two layers with a wait time of approx. 30 min. between coats. Long spray interruption may result

in clogging of the spray hose. The product may cure a lot faster if the hose is exposed to direct sunlight. Always empty and flush the machine after spraying or before long spray interruption. TechnoSeal@CrystalFlex-2C is a fast curing material and may be hard to remove if left in the machine.

Consumption

Waterproofing Concrete Brush Application	1st coat TechnoSeal@CrystalFlex-2C	kg/m ²	0.8
	2nd coat TechnoSeal@CrystalFlex-2C	kg/m ²	0.7
Waterproofing Concrete spray Application	TechnoSeal@CrystalFlex-2C	kg /m ²	1.5
Note: All values are approximate depending on surface conditions.			

Curing and Protection

Curing TechnoSeal@CrystalFlex-2C system application must be kept moist for a minimum of 48 hours. After initial set, moist curing, using continuous water spray is recommended. Treated surfaces shall be fog sprayed 3 to 4 times daily for the 48 hour period. For warmer climates, more frequent spraying may be required. It is important to keep the TechnoSeal@CrystalFlex-2C system moist to allow the crystal formation to occur.

The surfaces shall be protected from foot traffic for 48 hours or heavy traffic for 7 days. Freshly applied TechnoSeal@CrystalFlex-2C system must be protected from extreme weather conditions such as rain, strong winds, high temperatures and freezing for a period of not less than 48 hours after application.

A minimum of 7 days of air curing shall be allowed prior to immersing the surface in water. Back filling can be carried out after proper curing. Protection boards are generally not required. Backfill material shall be moist and not contain rocks or larger aggregate.

Mixing

Add 1/3 part of liquid Component B of TechnoSeal@CrystalFlex-2C into a clean mixing bucket. Gradually add TechnoSeal@CrystalFlex-2C powder 1/3 at a time while mixing continuously using either a forced action mixer; or a heavy duty, slow-speed drill fitted with an electric drill in slow circular motions. Adjust liquid part using small quantities until proper consistency is achieved to assure complete mixing until a workable creamy consistency is reached for brush coating. Mix only as much material that can be used within 20 minutes and stir mixture frequently. If the mixture starts to set, do not add more water; simply re-stir to restore workability. Mixing ratio is one bag of 30 Kgs of TechnoSeal@CrystalFlex-2C Component A (powder) is gradually added to 10 Kgs of Component B (liquid.)

For tie rod holes and pointing applications, add only a small amount of water to obtain "semi dry earth" mixed consistency that can enable holding a shape when squeezed in hand but easily crumbled when pressed between fingers.

Storage

TechnoSeal@CrystalFlex-2C must be stored dry at a temperature of 10°C-32°C Shelf life is one year from the date of manufacturing when stored under proper conditions.

Packaging

TechnoSeal@CrystalFlex-2C is supplied in pre measured 2 components composite pack consisting Component A-Powder 30 Kg HDPE bag packing & Component B Liquid 10 Kg plastic containers.

STERLING TECHNO TRADE INDIA PRIVATE LIMITED

The Specialist Construction Chemical Company®

Head Office: 109-111-112, 1st Floor, Vijaya Building, No. 17, Barakhamba Road, Connaught Place, New Delhi- 110001

Manufacturing Unit: Plot No-J-3, UPSIDC Site C, Surajpur Industrial Area, Greater Noida, Uttar Pradesh 201306

WEB: sterlingtechnotrade.com | **EMAIL:** support@sterlingtechnotrade.com | **TEL:** 01145084212

Special considerations:

- Do not apply TechnoSeal®CrystalFlex-2C at temperatures below 4°C, to a frozen substrate or if temperatures will drop below freezing during the curing period (approximately 24 hours).
- TechnoSeal®CrystalFlex-2C cannot be used as an additive to concrete or plasters. TechnoSeal® Admix should be considered for these applications. TechnoSeal®CrystalFlex-2C should not be confused with a coating or membrane. TechnoSeal®CrystalFlex-2C is not a decorative material.
- Do not use solvent based curing compounds.

Health and Safety instructions:

TechnoSeal®CrystalFlex-2C is non-toxic but contains cement, which is alkaline. May irritate eyes and skin and may cause skin sensitization. Gloves and goggles should be worn. Any splashes to the skin or eyes should be washed off with clean water. In the event of prolonged irritation, medical advice should be sought. Should use a dust mask while handling the powder. Protect yourself and others on the jobsite. Consider property in proximity of the application area to prevent loss or damage. Protect your jobsite from unauthorized persons. Store all materials and equipment safely and out of reach of children and animals. Observe container labels, SDS, applicable laws and regulations and all instructions before using the product and equipment. In case one of the components comes in contact with the skin, wash thoroughly with soap and water. Provide adequate ventilation in volume and pattern in working area.

Additional information:

Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

*Separate datasheet are available on these products.

DISCLAIMER: The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

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