

Uses

Crystalline waterproofing of concrete structures subjected to positive or negative hydrostatic pressure.

- Drinking water reservoirs
- Bridges
- Wastewater treatment plants
- Sewage channels
- Tunnels
- Foundations
- Underground car park
- Hydro technical structures
- Basements
- Swimming pools
- Manholes
- Retaining walls
- Lift pits
- Bathrooms
- Aquariums

Advantages

- Chemically reacts in depth within the concrete to prevent capillary rise of water and water leakage with or without pressure.
- The crystallization effect reactivates permanently in the presence of water.
- Seals cracks up to 0,4 mm.
- Cristex Concentrate is resistant to positive or negative side hydrostatic pressure up to 17 bar.
- Improves the concrete mechanical resistance, abrasion resistance and freeze-thaw resistance.
- Can be applied on both positive or negative side.
- Provides resistance to attack from chemicals, sea water, waste water, carbonates, chlorides, sulphates, and nitrates.
- Approved for use in potable water applications.
- Provides an economical solution when used with Cristex Damproofer as the second layer.

Description

Cristex Concentrate is a pre-packed and ready to use waterproofing mortar based on cement, specially graded and treated quartz sand and special chemical additives for crystalline concrete waterproofing.

In the presence of moisture, the chemically active compounds within Cristex products create a reaction between the un-hydrated concrete particles and water within the concrete matrix that generates millions of insoluble needle-like crystals which block the pores, capillaries and small cracks. It thus forms a permanent and effective barrier to water penetration without affecting the permeability of water vapours and allowing the substrate to breathe. Once they have penetrated into the concrete matrix the chemical compounds of Cristex remain permanently present. Latent when the concrete is dry, Cristex reactivates in the presence of humidity and moisture restarting the process of crystallization and sealing any new potential cracks or water ingress.

Physical Properties

Appearance	gray powder
Max. Particle Size US mesh	30
Solids	100%
Bulk density	1.30
pH	13
Penetration rate	2-3 mm / week
Water Resistance	170 m head pressure

European standards compliance

EN 1504-2: Products and systems for the protection and repair of concrete structures. Definitions, requirements, quality control and evaluation of conformity. Surface protection systems for concrete.

CE	
IRIDEX GROUP PLASTIC SRL B-dul Eroilor nr. 6-8, Voluntari, Jud. Ilfov 10 NB-1870-DPC-99/469/EC-0395/2-10	
EN 1504-2 Tab. 4 Products for the protection and repair of concrete structures. Surface protection systems for concrete (I) 1.2	
Capillary absorption and permeability to water (according to EN 1062-3)	$w < 0,1 \text{ kg/m}^2 \cdot \text{h}^{0,5}$
Water penetration depth measured on concrete cubes (acc. to EN 14630)	$\geq 5 \text{ mm}$

Application

Surface Preparation

Remove laitance, damaged, honeycombed, oil, grease, wax, dirt or any other form of foreign matter that might affect adhesion until a sound substrate is achieved. The surface must be even, sharp edges should be removed and too smooth surfaces should be roughened. Any running water should be stopped with a suitably approved plugging mortar such as Renderoc Plug 1. Exposed reinforcement should be rust cleaned by suitable means, usually by sandblasting at Sa 2,5 and coated with a continuous anticorrosion layer like Nitoprime Zincrich. Reprofiling and repairs should be performed using suitable repair mortars like Renderoc HB 45, Renderoc Plug 20, etc. Cracks exceeding 0.4 mm should be properly treated and sealed with repair mortars. Contact Iridex Group Plastic for further advice on suitable materials.

Do not apply Cristex Concentrate when the substrate is wet, but allow the water to soak in until the substrate is just visibly damp before proceeding. Any excess water should be removed using a sponge. Recommended surface preparation methods: wet sandblasting (sand + water) or hydroblasting (1500 – 2000 bar). If these methods are not available cleaning can be performed by suitable mechanical means followed by thoroughly pressure washing with clean water at min. 180 bar.

Cristex Concentrate is a product which is active at capillary level and therefore the proper surface preparation is essential. For further enquiries or if any doubts arise consult Iridex Group Plastic.

Application instructions

Concentrate Cristex can be applied, mixed with the proper amount of water, by brushing, spraying and dry shaking, as follows:

- One layer application – brushing or spraying
- Two layer application - brushing or spraying
- As a first layer followed by a second layer with Cristex Damproofer - brushing or spraying
- Dry shaking – uniform distribution of dry powder

Brush application

Mix 5 parts powder to 2 parts water by volume in a suitable and clean container for minimum 3 minutes until a creamy and lump-free slurry is obtained.

Brush firmly the Cristex Concentrate slurry into the substrate with circular movements after correctly preparing the surface (see above). If required, apply the second layer over the first layer while this is still green, immediately after initial hardening (approx. 3 hours after application).

Spray application

Mix 5 parts powder to 3 parts water by volume in a suitable and clean container for minimum 3 minutes until a creamy and lump-free slurry is obtained.

Use a suitable mortar spraying machine. After spraying the material should be evenly spread with a slightly damp brush to ensure the correct penetration of the slurry into the pores and capillaries. If required, apply the second layer over the first layer while this is still green, immediately after initial hardening (approx. 3 hours after application). After brushing the slurry can be levelled with a trowel.

Dry powder application

The Cristex Concentrate dry powder is evenly distributed at a rate of 1 kg/sqm all over the fresh concrete surface before power trowelling. This system is effective only when a power trowel is used for finishing.

Curing

The ability to crystallize into the concrete develops only in the presence of water. Therefore it is essential to maintain

a damp substrate for at least 48 hours after the application (for best results we recommend 5 - 7 days). Also, the treated surfaces should be adequately protected against sunlight or wind.

Packaging

20 kg plastic buckets.

Coverage

1 layer application - 1 kg/sqm.

2 layers application - 0,8 kg/ sqm per layer

1 layer application followed by a second layer with Cristex Damproofer - 0,8 kg/sqm

Dry powder application before power trowelling)- 1 kg/sqm

Limitations

Low temperature working

In cold conditions down to 1°C, the use of warm water (up to 20°C) is advisable to accelerate strength development. Normal precautions for winter working with cementitious materials should be adopted. Minimum application temperature is 5°C. The material should not be applied when the substrate and/or air temperature is 5°C and falling. At 5°C static temperature or at 5°C and rising, the application may proceed.

It is advisable to store the material in warmer conditions and, if necessary, prepare with warm water.

High temperature working

At ambient temperatures above 35°C, the material should be stored in the shade and cooler water (down to 20°C) used for mixing.

Storage

Cristex Concentrate has a shelf life of 12 months from the date of manufacture if kept in dry storage in the original, unopened buckets.

If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

Health and safety

For further information refer to the appropriate Manufacturer's Product Safety Data Sheet.

Fire

Cristex Concentrate is non-flammable.



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