

CRYSTALLINE WATERPROOFING

PERMANENT WATERPROOFING & PROTECTION



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building quality

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for a sustainable future

CRYSTALLINE TECHNOLOGY

The problem

Concrete is the most widely used construction material in the world. However, pores, capillaries and microcracks increase its porosity and permeability, while opening the way for water and air to enter the hardened material. **Water is reinforced concrete's worst enemy** and the primary cause for reinforcement steel corrosion, freeze-thaw cycles, and alkali-silica reaction, all of which result in concrete's expansion, cracking and, finally, deterioration. In addition, increased permeability exposes concrete to the harmful effects of chemicals, which can easily diffuse into its mass, leading to durability problems.

The solution

Filling all cracks, pores and capillaries seems to be the solution to the major causes of concrete's weakening, and this is what crystalline waterproofing is called to do; not only waterproof the concrete but also enhance its durability and minimize maintenance costs.

How crystalline technology works?

Crystalline waterproofing products consist of special active chemicals, which react with moisture and calcium hydroxide forming insoluble crystalline compounds. **These crystals seal pores and capillary cracks up to 0.4 mm in concrete, thus preventing water and a great variety of chemicals from entering the concrete mass.** What's really interesting is that crystalline waterproofing chemicals remain dormant in absence of water and get reactivated as soon as moisture appears. This property enables concrete to self-heal in case of new cracks.



Crystalline waterproofing not only prevents water ingress but also takes advantage of any existing water in the concrete mass by using it as the migrating medium to disperse the crystals into it.

Advantages of crystalline waterproofing products

- Speed up structure completion and **reduce labor costs**
- **Increase durability** and reduce maintenance costs
- **Protect against corrosion**
- **Protect against carbonation**
- **Increase concrete impermeability** without affecting vapor permeability
- Withstand both positive and negative water pressure
- Improve **frost resistance**
- Provide **chemical resistance**
- Easy to apply
- Can resist possible surface damage
- Environmentally friendly, ideal for **Green Projects**



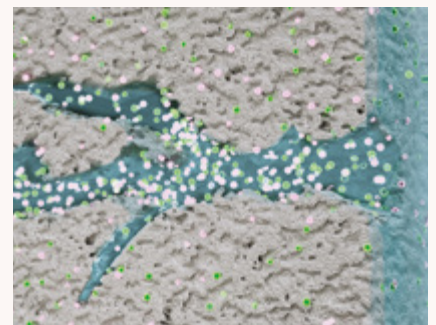
Stay **permanently active** and **self-heal**, extending the structure's service life

How **AQUAMAT-ADMIX** waterproofs:

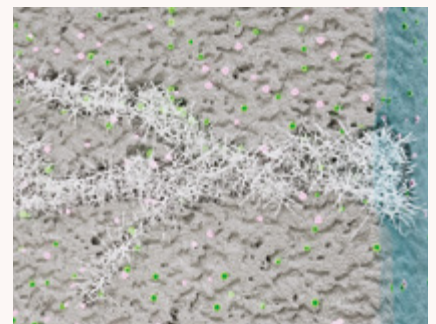
01 **AQUAMAT-ADMIX** is evenly dispersed in the concrete mass.



02 As moisture appears, **AQUAMAT-ADMIX**, **calcium hydroxide** and **other by-products** of cement hydration dissolve in the capillary water.



03 **AQUAMAT-ADMIX** reacts with water and **calcium hydroxide**, forming insoluble crystalline compounds.



These crystals seal concrete pores and capillary cracks up to 0.4 mm wide, preventing water and various chemicals from entering the concrete mass.

AQUAMAT-ADMIX

For new structures



Crystalline waterproofing admixture in powder form, added during concrete preparation, evenly dispersed in the concrete mass.

Fields of application

Suitable for any type of concrete element that is constantly or temporarily in contact with water, such as foundations, basements, water tanks, tunnels, canals, sewage and wastewater treatment tanks, swimming pools, etc.

Consumption

0.8-1.0 kg per 100 kg of cement.

S-P-06171 EPD®
environdec.com



AQUAMAT-PENETRATE

For existing structures &
as an ancillary product in new ones



Crystalline waterproofing cement-based slurry, surface-applied, entering the structure by chemical diffusion.

Fields of application

It is used for waterproofing of concrete elements in cases ranging from simple moisture to water under pressure. Suitable for waterproofing of basements, foundations, manholes, potable water tanks, sewage tanks.

Consumption

Approx. 0.75 kg/m²/layer, applied in 2 layers.



DUROCRET-PENETRATE

For repair and waterproofing, 2in1 product



Crystalline waterproofing and repair cementitious mortar.

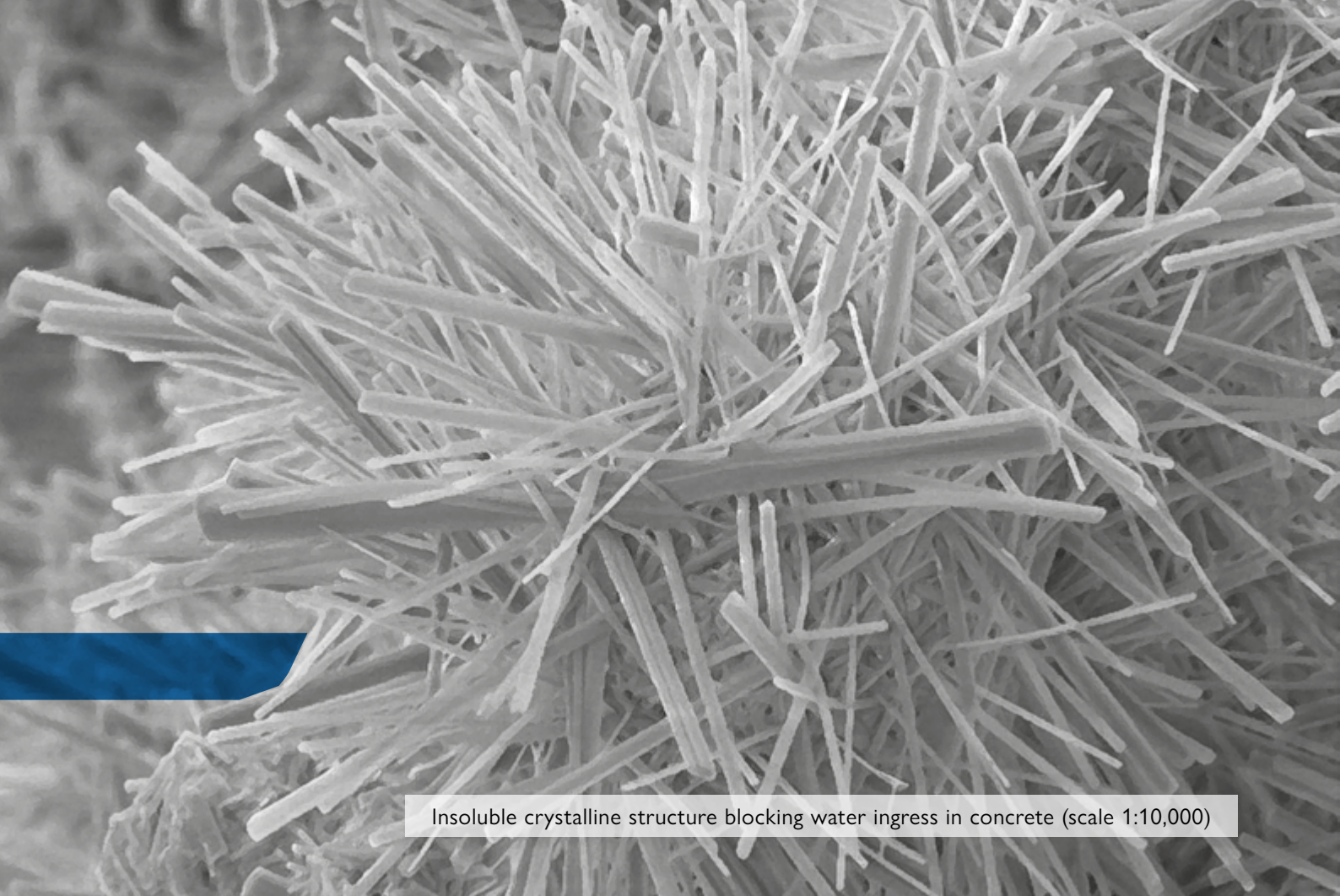
Fields of application

It is used for concrete or brickwork repair and patching, groove formation etc., for indoor and outdoor applications. Suitable for repair works in basements, foundations, manholes, water tanks, sewage tanks prior to application of the brushable waterproofing slurry **AQUAMAT-PENETRATE**.

Consumption

Approx. 17 kg/m²/cm of layer thickness.
To form a groove, 5-6 cm wide: 1.9-2.7 kg/m.





Insoluble crystalline structure blocking water ingress in concrete (scale 1:10,000)

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