

CONCRETE AQUAGUARD CRYSTAL SLURRY

DESCRIPTION

CRYSTAL SLURRY reacts with un-hydrated cement particles to grow millions of needlelike crystals deep into the concrete mass. Over a period of weeks and months, these crystals grow, filling the naturally occurring pores and voids in concrete, and permanently blocking the pathways for water and waterborne contaminants. Later, if cracks form due to settling or shrinkage, incoming water triggers the crystallization process and additional crystals begin to grow, filling cracks and ensuring that the structure's waterproofing barrier is maintained and protected. The concrete itself becomes the waterproof layer and the surface treatment is not required to remain intact for the system to be effective. CRYSTAL SLURRY consists of Portland cement, specially treated quartz sand and a compound of active chemicals. CRYSTAL SLURRY is supplied in powder form and needs only to be mixed with water prior to application.

FEATURES & KEY BENEFITS

- Stops water ingress in concrete
- Replaces unreliable exterior membranes, liners and coatings
- Reaches well below the surface and is not affected by surface wear or abrasion
- Reactivates in the presence of moisture
- Waterproofing increases with time
- Waterproofs from any direction (i.e. positive or negative side)
- Treatment may be applied to old or new concrete
- Safe for contact with potable water
- Resistant to the freeze-thaw cycle
- Protects reinforcing steel against corrosion
- Increased durability decreases building maintenance and repair costs

TYPICAL APPLICATIONS

- Foundations
- Basement
- Tunnels
- Pipes
- Maritime projects
- Submarine works
- Elevator pits
- Concrete walls
- Concrete slabs
- Construction joints
- Marine structures
- Swimming pools
- Water treatment plants
- Channels
- Potable water tanks
- Parking structures

APPLICATION GUIDELINES

All concrete to be treated with CRYSTAL SLURRY must be clean and have an "open pore" capillary system. Remove laitance, dirt, grease, etc. by means of high pressure water jetting, wet sandblasting or wire brushing. Surfaces must be carefully pre-watered prior to the CRYSTAL SLURRY application. Saturate (removing any freestanding water) the concrete surface with clean water prior to application. Pour water into a clean suitable mixing vessel, then gradually add the CRYSTAL SLURRY powder into the water while mixing with a low speed paddle mixer until a consistency of thick oil paint is obtained. Only mix suitable quantities that can be applied within 20 minutes and stir mixture frequently. If the mixture starts to set, do not remix with additional liquid, simply re-stir to restore workability.

Mixing Ratio: Use 5 parts of CRYSTAL SLURRY powder to 2 parts water by volume for slurry consistency. Use 3 parts of CRYSTAL SLURRY powder to 1 parts water by volume for slurry consistency over wet surfaces.

Slurry Consistency: Apply one or two coats (according to specification) of CRYSTAL SLURRY using a masonry brush or appropriate power spray equipment. When two coats are specified, apply the second coat whilst the first coat is still "green".

Post Treatment - Once the CRYSTAL SLURRY treatment has reached initial set, moist cure with a fine mist spray of water 2 - 3 times per day for three days. In hot or windy conditions it should be cured more frequently.

Alternative methods can be employed such as covering the application with wet burlap. During the curing period the CRYSTAL SLURRY treatment must be protected from rainfall, frost and water puddles. CRYSTAL SLURRY is an effective waterproofing system for rigid concrete structures only and may not reliably seal cracks and joints that experience constant or repeated movement.

COVERAGE

- 1 kg/m used as "dry pack" as part of the crack and joint repair system
- 1 kg/m² per mm applied as a slurry

The coverages are theoretical and depend on other conditions.

STORAGE

CRYSTAL SLURRY should be stored at room temperature (min 5°C and max 35°C), kept dry and out of direct sunlight. If these conditions are maintained and the product packaging is unopened, then a shelf life of 2 years can be expected.

PACKAGING

CRYSTAL SLURRY is supplied in 20 kg pails

TECHNICAL DATA

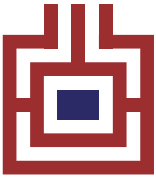
Colour	gray
Appearance	powder
Density	1.20 g/cm ³
pH (mixed with water)	13
Crystalline Penetration	2.5cm per month
Compressive strength	34.5 Nmm ² (Class R3: ≥25 MPa)
Adhesion strength by pull-off	2.82MPa (Class R4: ≥2.0 MPa)
Initial set time at 25°C	60 minutes
Depth of penetration (impregnation)	≥5mm
Mix Ratio (slurry)	5:2 (by volume) 3:1 (over wet surfaces)
Mix Ratio (Dry pack)	4:1 (by volume)
Capillary absorption and permeability to water	W < 0.1kg (m ² x h ^{0.5})
Solids content	100%


HEALTH & SAFETY

This product becomes caustic when mixed with water or perspiration. CRYSTAL SLURRY should only be used as directed. We always recommend that the Health & Safety Data Sheet is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal protection.

DISCLAIMER

Whilst any information and/or specification contained herein is to the best of our knowledge, true and accurate, we always recommend that a trial be carried out to confirm suitability of the product, as no warranty is given or implied in connection with any recommendations or suggestions made by us or our representatives, agents or distributors. The information in this data sheet is effective from the date shown and supersedes all previous. Please check with your office to confirm that this is current issue: (January 2018).



	
Manufactured For: Concrete Aqua Guard Ltd. Teelin Rd, Carrick, Co Donegal. Ireland 17 1170/CPR/ER.03608	
CRYSTAL SLURRY Principle 1 (PI): Protection against ingress Method 1.2 Impregnation (I)	
EN 1504-2 PRODUCTS FOR PROTECTION AND REPAIR OF CONCRETE STRUCTURES. SURFACE PROTECTION SYSTEMS FOR CONCRETE. Tables 1 & 4 Impregnation	
Essential characteristics	Performance
Water vapour permeability (where relevant)	NPD*
Capillary absorption and permeability to water (according to EN 1062/3)	$W < 0,1 \text{ kg}/(\text{m}^2 \times \text{h}^{0,5})$
Resistance to chemicals (where relevant)	NPD*
Thermal compatibility (where relevant)	NPD*
Adhesion strength by pull-off test (where relevant)	NPD*
Reaction to fire	Class A1
Slip/skid resistance (where relevant)	NPD*
Water penetration depth measured on concrete cubes (according to EN 14630)	$\geq 5 \text{ mm}$
Dangerous substances	NPD*

* NPD. No Performance Determined