

AquaArm Crystalline IC

(Formerly known as MYK Aqua fin Crystalline IC)

Crystalline Waterproofing Coating



TECHNICAL DATA SHEET

Product Description

AquaArm Crystalline IC is a state-of the art one component, penetrating crystalline material for waterproofing and protecting new or old structurally sound concrete. It resists strong hydrostatic pressure. AquaArm Crystalline IC is powered by advanced crystalline technology which chemically reacts with moisture and free lime to reduce the water absorption of the resultant cement matrix within the concrete. This is a result of the formation of nano-scale crystals by the active catalysts present in the capillary system. This sustains a durable waterproof effect in the concrete, thereby blocking the passage of water. This reaction will continue to take place anytime water is present for the life of the concrete structure where by making the AquaArm Crystalline IC a truly permanent and integral waterproofing solution. The AquaArm Crystalline IC nano-crystals will also grow in and along static hairline crack sealing them and preventing further incoming water.

Uses

- Exterior and interior waterproofing in below grade structures i.e. Basement Raft & retaining wall, lift pits, foundations.
- Water Tanks, Waste Tanks, STPs, Manholes
- Tunnels

Features and Benefits

- Penetrates the capillaries deep in concrete.
- Continually active.
- Can be applied to damp substrates.
- Chloride free.
- Resists high levels of hydrostatic pressure.
- Can be applied in both positive & negative side.
- Carbonisation barrier.
- Self heal cracks up to 0.4 mm.
- Easy to use - needs only water for mixing
- Can be applied to green concrete as soon as forms are stripped
- Protects concrete against fresh water, salt water, waste water & aggressive ground water

Application Methodology

Step no 1: Surface Preparation

The substrate must be sound, clean and have an open capillary structure. The surface must be porous and permit a good surface adhesion so that the chemicals can penetrate well into the concrete. Horizontal areas should have a rough surface. Smooth surfaces must be mechanically abraded in order to achieve good penetration.

All adhesion inhibiting substances such as dirt, cement laitance, mould oil, hardeners, loose components, paint etc. must be removed, by water jetting or other mechanical methods.

Eradicate all ridges, gravel pockets and other damaged areas. Poor day joints and visible cracks (non-dynamic) above 0.4 mm should be chased out 20 mm wide by 25 mm deep. Anchoring holes should be roughened.

Pre-Wetting all surfaces to be waterproofed with clean water is mandatory. Repeated dampening produces saturation through which the porosity of the substrate is present whilst at the same time promoting the growth of crystals deep in the pores of the substrate. When using AquaArm Crystalline IC the substrate should be matt damp and not wet. Avoid the formation of puddles.

Step no 2: Product Preparation & Mixing

Pour 6.75 to 8.0 litres of clean (cool) water into a clean mixing bucket and mix in enough dry mortar whilst mechanically stirring (drill at 300 - 700 rpm) until a lump free, homogenous fluid or sprayable consistency is achieved. Only mix as much material that can be used within 30 to 60 minutes. After a maturing time of min. 3 minutes, stir through once again.

Substrate/ Application temp: +5°C to +30°C. Lower Temperatures extend, higher temperatures reduce the curing time

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Step no 3: AquaArm Crystalline IC application

HORIZONTAL SURFACES & CONSTRUCTION JOINTS

A. Dry-sprinkle and power-trowel or wooden float application:

A trial dry-shake application is highly recommended prior to the actual application. • Standard application for concrete with design strength up to 4000 psi (27.6 MPa): When the concrete to be treated starts to reach initial set, the specified amount of AquaArm Crystalline IC is dry distributed, by hand, using a sieve, or similar device, onto the concrete surface. It is then trowelled in until coverage is uniform and the specified finish is achieved (smooth or brushed).

B. Mud Slabs / Split Slabs / Construction Joints

Apply AquaArm Crystalline IC in slurry or dry powder consistency to pre-watered concrete substrate, split slabs or construction joints immediately prior to casting the structural slab or wall.

C. Brush or spray application:

Note: Slab surfaces must have a rough wood float or broom finish. • Apply AquaArm Crystalline IC in slurry consistency in the specified quantity, in one coat.

VERTICAL SURFACES & CONSTRUCTION JOINTS

I. Brush application:

Apply two coats of AquaArm Crystalline IC, in the specified quantity, in a slurry consistency with a masonry brush. Brush on the material evenly and work it well into the surface. Apply second coat while the first coat is still tacky ("green").

II. Spray Application:

AquaArm Crystalline IC may be applied using appropriate compressed-air spray equipment. Spray on one or two coats, according to the specification, in circular movements. Apply second coat while first coat is still tacky ("green").

Step no 4: Curing: and Protection

C. Outdoor, or exposed treated areas:

- Keep damp (moist) for a period of 2 - 3 days for standard waterproofing applications, 7 days for potable water tanks. Start curing as soon as AquaArm Crystalline IC has hardened sufficiently so as not to be damaged by a fine water spray. Alternatively a dissipating resin curing agent in elevator pits, wastewater tanks, etc. can be used
- Protect exposed surfaces against direct sun, wind and frost by covering with plastic sheeting, burlap, or similar. Do not lay plastic sheeting directly on AquaArm Crystalline IC as air contact is required for proper curing.

- The freshly treated surfaces should be protected from rain for a minimum period of 24 hrs.
- Back filling can be carried out 36 hrs after completion of the AquaArm Crystalline IC treatment. Protection boards are generally not required. Backfill material shall be moist and not contain rocks or larger aggregate.

A. Indoor treated areas:

- Self-curing in cool areas with high humidity.
- Keep moist for 2 - 3 days in areas with low humidity and 7 days for potable water tanks.
- Provide air circulation for minimum 24 hrs following the AquaArm Crystalline IC treatment in poorly ventilated areas and deep pits.

B. Water Tanks:

- Can be carefully filled after 3 days. Do not fill large tanks faster than 6½ feet per 24 hrs (2 m/24 hrs).
- After complete curing of AquaArm Crystalline IC, potable water reservoirs should be thoroughly rinsed with potable water prior to being placed in service

Technical Data

Basis	Sand/cement, inorganic
Bulk density	1.1 kg/litre
Colour	Cement Grey
Pot life: (at +23° C / 60% RH)	30 minutes
Setting Time: (at +23° C / 60% RH)	45 minutes
VOC, g/L	0 g/L
Water impermeability (CRD-C 48-92)	13 bar negative or positive side

AquaArm Crystalline IC confirms to BS 8102:2009 & IS 16471:2017, Type B Water Proofing product.

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Consumption

1.5 kg/m² in two coats the consumption will vary depending upon the substrate condition.

Ready for exposure at +20° C and 60% relative humidity

- to rain after approx. 24 hours
- to foot traffic after approx. 5 hours
- Backfilling the building trench after 3 days
- filling containers after approx. 7 days.

Packaging

10, 25 kg bag

Storage and Shelf Life

Dry, 12 months in the original unopened packaging.
Use opened packaging promptly

Annotation

Protect areas not to be treated with AquaArm Crystalline IC from its' effects. AquaArm Crystalline IC cannot be used as an additive for concrete or renders i.e. it should not be mixed with such products.

- With concrete containing fly-ash it is possible that successive coats of AquaArm Crystalline IC may discolor and there may be an impaired reaction. The fly-ash component according to ASTM C-618 type C may only be max. 30% of the binder. The minimum quantity of CaO in the fly-ash should not be below 15%. Please contact the technical department declaring the particular specification for concretes with type C fly-ash with low CaO content, type F or other pozzolanic concrete additives.
- The reaction between AquaArm Crystalline IC and the free lime in the concrete can lead to minor efflorescence. This is not detrimental and can be removed with a brush.
- A sound substrate is a prerequisite for a durable bond between the substrate and the coating system. Friable areas and substances that inhibit bonding must be completely removed. High pressure water jetting (>400 bar), very high pressure water jetting (up to 2000 bar). The final treatment must be to clean by pressure washing.
- In water containers temperatures around +10° C to +15°C are to be expected. In order to guarantee complete hydration of the cement, keep the coating damp for an adequate length of time (constant relative humidity of > 80%) and protect against drying out. In general 7 days is sufficient. It is essential to avoid the formation of condensation or standing films of water during this time period. Where there is a danger of dropping below the dew point (condensation formation) install dehumidifiers until the mortar is cured. At no time should uncontrolled warm air be blown inside.
- AquaArm Crystalline IC may need up to one month to achieve its maximum waterproofing properties. Influencing factors are ambient temperature, humidity, concrete composition etc.

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Product Categories Available



Legal Note

The information, and, in particular, the recommendations relating to the application and end-use of MYK Arment products, are given in good faith based on MYK Arment current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with MYK Arment's recommendations. In practice, the difference in materials, substrates and actual site conditions are such that no warranty in respect of merchant ability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. the user of the product must test the product's suitability for the intended application & purpose. MYK Arment reserves the right to change the properties of its products. the proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local product data sheet for the product concerned, copies of which will be supplied on request.

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