



Concrete Waterproofing by Crystallisation using a Dryshake Catalytic, Crystalline Waterproofing Material

The waterproofing admixture shall be of the dry, cementitious powder type, known as 'concrete waterproofing by crystallization' which, when introduced to the concrete, shall cause a catalytic, multiplicative crystalline growth response, resulting from a reaction between water, the dryshake chemicals and all of the major chemical by-products of the cement hydration processes. With water as the catalyst, this reaction shall occur primarily with the calcium silicate hydrates, calcium hydroxide, various mineral salts (including potassium) plus unhydrated and partially hydrated cement particulate.

The catalytic crystalline waterproofing dryshake shall generate within the concrete the capacity to be reactive on an everlasting basis, whenever moisture is available within the concrete.

The catalytic crystalline waterproofing dryshake shall not have any accelerating or excessive retarding effect upon the concrete. It shall not in any way decrease the compressive strength, nor shall it cause any other detrimental effects upon the concrete.

The catalytic crystalline waterproofing dryshake shall cause the chemical control and permanent filling of capillaries, bleed tracts and small voids within the concrete with a multiplicative crystalline growth which:

- Is resistant to greater than 120 meters of hydrostatic pressure
- Is able to 'bridge' and seal static cracks of up to point four of a millimeter (0.4mm) in width
- Is tolerant to a pH range of between 3.0 and 11.0, in constant contact
- Is unaffected by temperatures ranging from -320C to 1300C, in constant contact
- Is not affected by humidity, ultraviolet rays or oxygen levels (oxidisation)
- Will prevent the penetration and movement of chloride ions within the concrete to below the level necessary to cause electrolytic corrosion of the reinforcement steel.

	Requirement	Standard for Testing	Criteria
a.	Permeability	CRD-C-48-73 DIN 1048: Part 5	No leakage Less than 30mm
b.	Resistance to Chloride Penetration	ASTM C672-76	Chloride Ion concentration below 500 ppm at 2cm depth
c.	Chemical Resistance	ASTM C267-77	No detrimental effect
d.	Suitability for use in Potable Water Containments	S.S. 245	Suitable for use in potable water containments
e.	Carbonation	JAERI-M-89-211	Carbonated thickness below 8.4mm