

WFP Crystalline Powder Concentrate



Powder admixture for integral waterproofing by crystallization

Product description	WFP Crystalline Powder Concentrate is a high grade integral and mineral waterproofing admixture for concrete or mortars. By reaction with the cement paste WFP Crystalline Powder Concentrate forms nano-crystals, which close capillaries, pores or cracks permanently in the cement matrix. The newly formed crystal structures are not water-soluble	
Area of application	WFP Crystalline Powder Concentrate is used for waterproofing of concrete and at same time for corrosion protection. Typical areas of application are water retaining walls, water tanks, tunnels, dams, piles, canals, foundations, basements, cooling towers, rainwater catch or retention basins, pools etc.	
Properties	<ul style="list-style-type: none">- Permanent active- Seals microcracks and hairline cracks, up to 0.4 mm- Self healing properties- Permanent waterproof concrete- Open to diffusion and permeable to water vapour- Protection to reinforcement steel- Withstands high water pressure (up to 12 bars)- Integral waterproofing- Non toxic- Compatible with most types of concrete admixtures- „Made in Germany“	
Specification	Material:	Special cements and additives
	Appearance:	powder
	Color:	grey
	Bulk density:	approx. 1.04 – 1.06
	pH value:	> 11,5
	Processing temperature:	+8°C to +40°C
	Application temperature:	above +5°C
Delivery form	Bags with plastic liners of 20 kg, 42 bags per pallet	
Storage	12 months storable in original, unopened bags under cool (minimum +5°C, maximum +40°C) and dry conditions. Open bags are to be used up as soon as possible.	

Requirements for concrete	Minimum cement content:	CEM II 270 kg/m ³ CEM III/A 320 kg/m ³
	Blastfurnace slag caol fly ash	max. 120 kg/m ³ max. 80 kg/m ³

Installation

Material

Dosage general

The recommended dosage is 0.8 – 1.5% WFP Crystalline Powder Concentrate, based on the amount of cement. A maximum dosage of 2% must not be exceeded. The amount of dosage depends on the required concrete or mortar mix design and the reactivity of the cement. The material can be used in high w/c ratio (water/cement ratio) concrete, up to ≤ 0.55 .

It is advisable to carry out trial mixes to establish the exact dosage rate required.

Dosage in batching plant (ready-mix factory)

WFP Crystalline Powder Concentrate must be added to the aggregates and mixed at least 30 seconds before adding cement and water. The mixing must be continued for at least 60 seconds until the concrete mix has reached the working properties.

Dosage in transport mixer truck

In case of adding WFP Crystalline Powder Concentrate on the construction site (transport mixer truck), it must be added as a suspension in water, not in powder form. A mixing ratio of 1:1 (powder : water) has to be adhered. Fill a clean container with cold, clean water and pour in WFP Crystalline Powder Concentrate while stirring. Add this slurry completely into the mixing drum of the transport mixer truck.

Average mixing time is 1 minute per cbm content, but minimum 5 minutes. Note that the additional slurry water does not increase the water/cement ratio above the projected value. The water of the slurry must be included in the water/cement calculation at batching plant.

The working time of with WFP Crystalline Powder Concentrate mixed concrete depends on the reactivity of used cement and can either be prolonged or shortened.

Dosage in mortars

WFP Crystalline Powder Concentrate must be added **to the aggregates** and mixed with approx. 45% of the mixing water. Mix at least 2 minutes before adding the remaining water and cement.

Please note:

- WFP Crystalline Powder Concentrate should be tested in trial mixes to determine the optimum dosage and any necessary changes to existing additive dosages.
- Do not use without checking workability.
- Avoid lump formation.
- With WFP Crystalline Powder Concentrate modified concrete may tend to slightly efflorescence depending on the composition.
- The material is non corrosive and has no adverse effects on the reinforcement steel.
- Never add WFP Crystalline Powder Concentrate powder into mixed fresh (wet) concrete or mortar mixes as this will increase the risk of lump formation.
- The aggregates must have a continuous sieve-line.
- The addition of coal fly ash is limited on 30 kg/cbm.
- The addition of brown coal fly ash is forbidden.

Remark

Performance Tests

Test Name	Time	28 th day	Test Standard
Determination of the water Soluble Chloride content	Measurement	% 0,05	EN 480-10
	Requirement	<%0,1	
Compressive strength	Measurement	% 90	EN 12390-3
	Requirement	>%85	

The information complies with the current state of development. There is no claim for completeness. A professional and therefore successful processing of the products is not within our responsibility. We accept a warranty only for the quality of the products, but not for processing. It is the responsibility of the user to evaluate the suitability of our products for its purpose. Preliminary tests are recommended.