

# DURAHIT® Crystal Ad 3000

Item No 3652

**Liquid crystalline waterproofing admixture for durable concrete projects**

## FIELDS OF APPLICATION

DURAHIT® Crystal Ad 3000 is a crystalline waterproofing admixture especially designed for providing a permanent waterproofing system in demanding concrete projects.

The special crystalline technology reduces the capillary diameter and provides a self-sealing effect to the concrete structure. This effect enables concrete to self-heal shrinkage cracks up to 0.4 mm.

DURAHIT® Crystal Ad 3000 is therefore suitable for concrete projects with advanced requirements in durability and quality and where optimum waterproofing is required. Typical applications are:

- Marine structures like harbours and docks
- Dams, water reservoirs, water containment structures and swimming pools
- Tunnel- and underground constructions
- Waste treatment facilities
- Basements and foundations
- Precast concrete
- Potable water structures

DURAHIT® Crystal Ad 3000 achieves a very effective protection mechanism which provides the following benefits to concrete:

- Significantly decreased water penetration
- Subsequent crack minimising
- Seals existing and future cracks up to 0.4 mm
- Resists high hydrostatic water pressure from either positive or negative side of the building component
- Enhances resistance against chemicals and aggressive media
- Decreased risk of steel corrosion
- Increases concrete's durability and rises its long-term performance
- May contribute to lower maintenance costs and less replacements

Since DURAHIT® Crystal Ad 3000 advances concrete's durability, the waterproofing admixture can make a contribution to ecological sustainability.

## WORKING PRINCIPLE

DURAHIT® Crystal Ad 3000 is a liquid admixture that activates a crystalline reaction with the free lime and moisture in the concrete mix in order to generate permanent and durable crystalline system.

This crystal formation becomes an integral part of the cement matrix allowing concrete to self-heal shrinkage cracks when exposed to water.

These waterproofing properties can provide optimum protection against water ingress.

## TECHNICAL DATA

Homogeneity	homogenous
Colour	colourless
State	liquid
Density	1.19 ± 0.02 g/cm <sup>3</sup>
pH-value	12 ± 1
Chloride content	< 0.10 mass.-%
Alkali content (Na <sub>2</sub> O equivalent)	< 12.5 mass.-%
Workability	from +1 °C
Shelf life	approx. 1 year from date of production if stored properly
Storage conditions	Store in unopened, original sealed packaging between +10 °C and +35 °C. Protect from frost and insolation.

## DOSAGE

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The dosage of DURAHIT® Crystal Ad 3000 is 5.00% of the total tempering water of the concrete including the moisture of aggregates and sand.

The total dosage range is 0.50 – 4.00% of the cement content by weight.

## PROCESSING INDICATIONS

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### Batching Plant

DURAHIT® Crystal Ad 3000 should be added with the mixing water. Reduce mixing water by 5 litre per cubic metre (m³) compared to an untreated mix design! The mixing time must comply with the regulations defined in EN 206-1.

### Concrete Transit Mixer

Add DURAHIT® Crystal Ad 3000 into the drum when the truck arrives at the job site. Mix for 8 min. at high speed before pumping. Preliminary lab trials are mandatory for this type of administration to adjust the required mixing water at the batch plant and at the job site.

This product is classified as hazardous according to the CLP regulations. See safety data sheet for further information.

## COMPATIBILITY

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Under the condition that a maximum w/c value of < 0.55 will be maintained, the following parameters should be observed:

### Cement

DURAHIT® Crystal Ad 3000 is compatible with all common cement types. It should be taken care to ensure that the pozzolanic content in the cements is not exceeding more than 50% and that a minimum cement content of 280 kg/m³ is maintained.

### Pozzolanic binders and fly ash

Pozzolanic binders including microsilica enter into competition with the active ingredients of DURAHIT® Crystal Ad 3000 for the free lime. Against this background, suitability tests should be conducted to confirm the compatibility and effectiveness of the substance combination. The fly ash content in the formulation should in any case not exceed 50% of the total binder content.

### Admixtures

DURAHIT® Crystal Ad 3000 is compatible with most concrete admixtures. To adjust water content, concretes consistency and setting behaviour we recommend to use PANTARHIT® high performance superplasticizers and PANTARHOL hydration control admixtures.

### Reinforcement

The planning of the reinforcement and crack widths is not influenced by the application of DURAHIT® Crystal Ad 3000.

## PACKAGING

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- 30 l can
- 200 l barrel
- 1000 l container

## REMARKS

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This information describes the application- and processing possibilities of a product and its operation principles under regular conditions. Having no influence on the further application and processing, especially in conjunction with other construction materials, the given indication are neither a warranty in respect of the product's properties or its fitness for a particular purpose nor a full instruction of use. This information, any other recommendation or verbal advice are not binding and do not infer to any liability or legal demand.

Due to continuous further development, the most recent Technical Data Sheet is valid and will be supplied on request. All orders are accepted subject to our current general terms and conditions.

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**SUITABILITY- AND PRE-TESTS ARE NECESSARY BEFORE APPLYING THE CONCRETE ADMIXTURE!**