

DURAHIT® Crystal Ad 2000 (DM)

Item No 3651

Hydrophobic crystalline water resisting admixture acc. to DIN EN 934-2 in powder form

FIELDS OF APPLICATION

DURAHIT® Crystal Ad 2000 (DM) is a hydrophobic and crystalline admixture especially designed for providing concrete with an integral, permanent waterproofing system.

The special 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 2000 (DM) 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 2000 (DM) achieves a very effective protection mechanism which provides the following benefits to concrete:

- Significantly decreased water penetration
- 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 2000 (DM) advances concrete's durability, the waterproofing admixture can make a contribution to ecological sustainability.

WORKING PRINCIPLE

DURAHIT® Crystal Ad 2000 (DM) consists of Portland cement, very fine treated silica sand and various active, proprietary chemicals that react 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 providing waterproofing properties and optimum protection against water ingress

DURAHIT® Crystal Ad 2000 (DM) still allow the passage of vapour diffusion through the concrete structure.

TECHNICAL DATA

Homogeneity	homogenous
Colour	grey
State	powder
Bulk density	1.40 ± 0.03 g/cm ³
pH-value	11.5 ± 1
Workability	from +5 °C
Chloride content	≤ 0.1 mass-%
Alkali content	≤ 12.5 mass-%
Shelf life	approx. 1 year from date of production if stored properly
Storage conditions	Store in a dry place in unopened, undamaged original packaging. Protect from moisture, direct sunlight and extremes of temperature.

DOSAGE

The dosage of DURAHIT® Crystal Ad 2000 (DM) is 2.50% of the total tempering water of the concrete including the moisture of aggregates and sand.

This leads to a typical dosage of 1.00 – 1.20% of the cement content by weight. The maximum dosage should not exceed 2.00% of the cement content.

PROCESSING INDICATIONS

DURAHIT® Crystal Ad 2000 (DM) should be added to the aggregate as it is being batched or to the initial batching sequence.

The mixing time must comply with the regulations defined in EN 206-1.

Do not add DURAHIT® Crystal Ad 2000 (DM) at the end of the batching sequence! It may result in extended setting characteristics or premature stiffening of the concrete.

DURAHIT® Crystal Ad 2000 (DM) may require a slight increase in air entrainment dosage.

Setting times may be slightly extended depending on cement chemistry. However, under normal conditions, DURAHIT® Crystal Ad 2000 (DM) will provide a normal set concrete. Concrete containing DURAHIT® Crystal Ad 2000 (DM) may develop higher ultimate strengths than plain concrete. Trial mixes should be carried out under project conditions to confirm concrete performance.

In order to ensure concrete performance of all project concrete ingredients, pre-tests should be performed.

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

COMPATIBILITY

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 2000 (DM) 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 2000 (DM) 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 2000 (DM) 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 2000 (DM).

PACKAGING

- 20 kg bag
- Other packaging units on request

REMARKS

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.

Edition: 26th March 2020

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