

## DURAHIT<sup>®</sup> Crystal Ad 2000 (DM)

Item No. 3651

**10 years performance warranty for our crystalline water resisting admixture**

### CUSTOMER

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Steyrustöðin ehf  
Malarhöfða 10  
110 Reykjavík

### PROJECT

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Contractor

Project

### PROJECT SPECIFICATIONS

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The process indications and the mix design requirements acc. to the technical data sheet must be followed.

### HA-BE WARRANTY

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1. Ha-Be Betonchemie GmbH guarantees that the crystalline water resisting admixture DURAHIT<sup>®</sup> Crystal Ad 2000 (DM) is of merchantable quality and that from the date of concrete placement will perform according to its specification and will waterproof structurally sound reinforced concrete for a period of ten (10) years.
2. Ha-Be Betonchemie GmbH warrants that the product supplied is free from material defects, will conform to the quality control standards and will contain all components in its proper proportion.
3. Ha-Be Betonchemie GmbH will not avouch any warranty if the product is not applied according to instruction and in the specified quantity.
4. Ha-Be Betonchemie GmbH product DURAHIT<sup>®</sup> Crystal Ad 2000 (DM) is not warranted where the concrete is structurally unstable shearing under load, where cracks are volatile or caused by penetration of the element, are created by mechanical damage, seismic or other abnormal activities.
5. Ha-Be Betonchemie GmbH makes no warranty, express or implied, for leakages or chloride induced corrosion through cold joints, construction joints, expansion joints, penetrations or where honeycombing is present and/ or any third-party activity.

6. Ha-Be Betonchemie GmbH's sole liability in connection with claims arising out of the use of or the purchase of the crystallizing agent DURAHIT® Crystal Ad 2000 (DM). In no event Ha-Be Betonchemie GmbH shall be liable for incidental or consequential damages of the concrete such as removals of materials recovering the treated concrete labour costs, making repairs or replacement of other building materials or merchandise.

7. In all other cases which are not specially mentioned above the General Terms and Conditions of August 2016 are valid.

#### **ATTACHMENT**

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- > Product Liability Certificate of Insurance of Ha-Be by Allianz.
- > Technical Data Sheet

Hameln, 18.01.2022



Björn Mordhorst | Managing Director



**Betriebs- und Produkthaftpflicht  
Versicherungsbestätigung**

**General and Product Liability  
Certificate of Insurance**

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**Versicherungsnehmer**

**Policy holder**

Ha-Be Betonchemie GmbH  
Stüvestr. 39  
31785 Hameln

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**Versicherungsscheinnummer**

**Policy number**

AS-0243092679

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**Deckungsumfang**

**Scope of Cover**

Der Versicherungsschutz umfaßt nach Maßgabe der Summen und Bedingungen des obengenannten Versicherungsvertrages die gesetzliche Haftpflicht des Versicherungsnehmers wegen Personen- und Sachschäden, die durch von ihm

- hergestellte oder gelieferte Produkte
- ausgeführte Arbeit

nach Lieferung der Produkte oder nach Abschluß der Arbeiten eingetreten sind.

The insurance covers subject to the limits and conditions of the above-mentioned insurance contract the legal liability of the policy holder in respect of bodily injury and property damage caused by

- products manufactured or supplied by the insured
- operations carried out by the insured

occurring after supply of such products or after completion of such operations.

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**Geltungsbereich**

**Territorial scope**

weltweit / worldwide  
ohne / excluding  
USA,US-Territorien und Kanada / USA, US-territories and Canada

**Versicherungssumme für**  
Personen- und Sachschäden  
pauschal je Ereignis

5.000.000 EUR

**Limits of Indemnity for**  
Bodily injury and property damage  
(combined single limit)  
any one occurrence

**Jahresmaximierung**  
Personen- und Sachschäden  
pauschal

10.000.000 EUR

**Aggregate Limit**  
Bodily injury and property damage  
(combined single limit)

**Versicherungsdauer**

Beginn 01.01.2019  
Ablauf 01.01.2022

**Period of Insurance**

Commencement  
Expiry

Die Versicherung verlängert sich stillschweigend um eine weitere Periode, wenn sie nicht 3 Monate vor Ablauf der laufenden Periode gekündigt wird.

The insurance is automatically extended for a further period unless it is cancelled three months prior to expiry of the current period.

München, den 18. März 2021

Allianz Versicherungs-Aktiengesellschaft



Frank Sommerfeld  
Vorsitzender des Vorstands  
Allianz Versicherungs-AG



Dr. Dirk Vogler  
Mitglied des Vorstands  
Allianz Versicherungs-AG

## DURAHIT<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> Crystal Ad 2000 (DM) 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<sup>®</sup> Crystal Ad 2000 (DM) advances concrete's durability, the waterproofing admixture can make a contribution to ecological sustainability.

### WORKING PRINCIPLE

DURAHIT<sup>®</sup> 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<sup>®</sup> 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 <sup>3</sup>
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

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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.

The total dosage range is 0.50 – 2.00% of the cement content by weight.

## PROCESSING INDICATIONS

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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

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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 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/m<sup>3</sup> 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

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- 20 kg bag
- Other packaging units on request

## 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 indications 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: 30 April 2020

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