Ha-Be

*Making good concrete better*

# DURAHIT® – WATERPROOFING SYSTEM

## Optimum protection for durable and high-quality concrete

CONCRETE ADMIXTURES FOR THE SUSTAINABLE PRODUCTION OF CONCRETE PRODUCTS ***

HA-BE'S COMMITMENT TO SUSTAINABLE CONCRETE ADMIXTURES

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Waterproofing system for durable high quality concrete

# DURAHIT® – OPTIMUM PROTECTION

Water is the major reason of almost all damages and visual defects in concrete. Penetrating into the inside of building material, it may cause serious problems such as corrosion, salt burst, freeze-thaw damage or efflorescence. DURAHIT® products help to prevent these damages and secure your projects by providing durable protection. The DURAHIT® line allows increased service lives, lower maintenance costs, attractive appearances and a more durable structures.

### The need for waterproofing

Water is the major reason of almost all damages and visual defects in concrete. The porous structure of the building material enables water and dissolved contaminants to penetrate via the capillary suction into the inside of concrete.

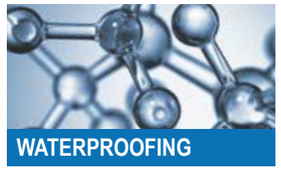
This may cause various problems such as corrosion of reinforcing steel, salt burst, or freeze-thaw damage.

### Our waterproofing system

There is no doubt that by stopping concrete from absorbing water, damage is drastically reduced. As water can enter concrete from any side, water repellence should affect the entire concrete structure, not only the top surface. Accordingly our product concept contains integral waterproofing admixtures and crystalline additives. To provide concrete structures and especially their surfaces with even greater resistance, we have developed complementing impregnations.

Ha-Be Products

## COMPONENTS OF DURAHIT® WATERPROOFING SYSTEM



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CONCRETE ADMIXTURES FOR THE SUSTAINABLE PRODUCTION OF CONCRETE PRODUCTS

HA-BE'S COMMITMENT TO SUSTAINABLE CONCRETE ADMIXTURES

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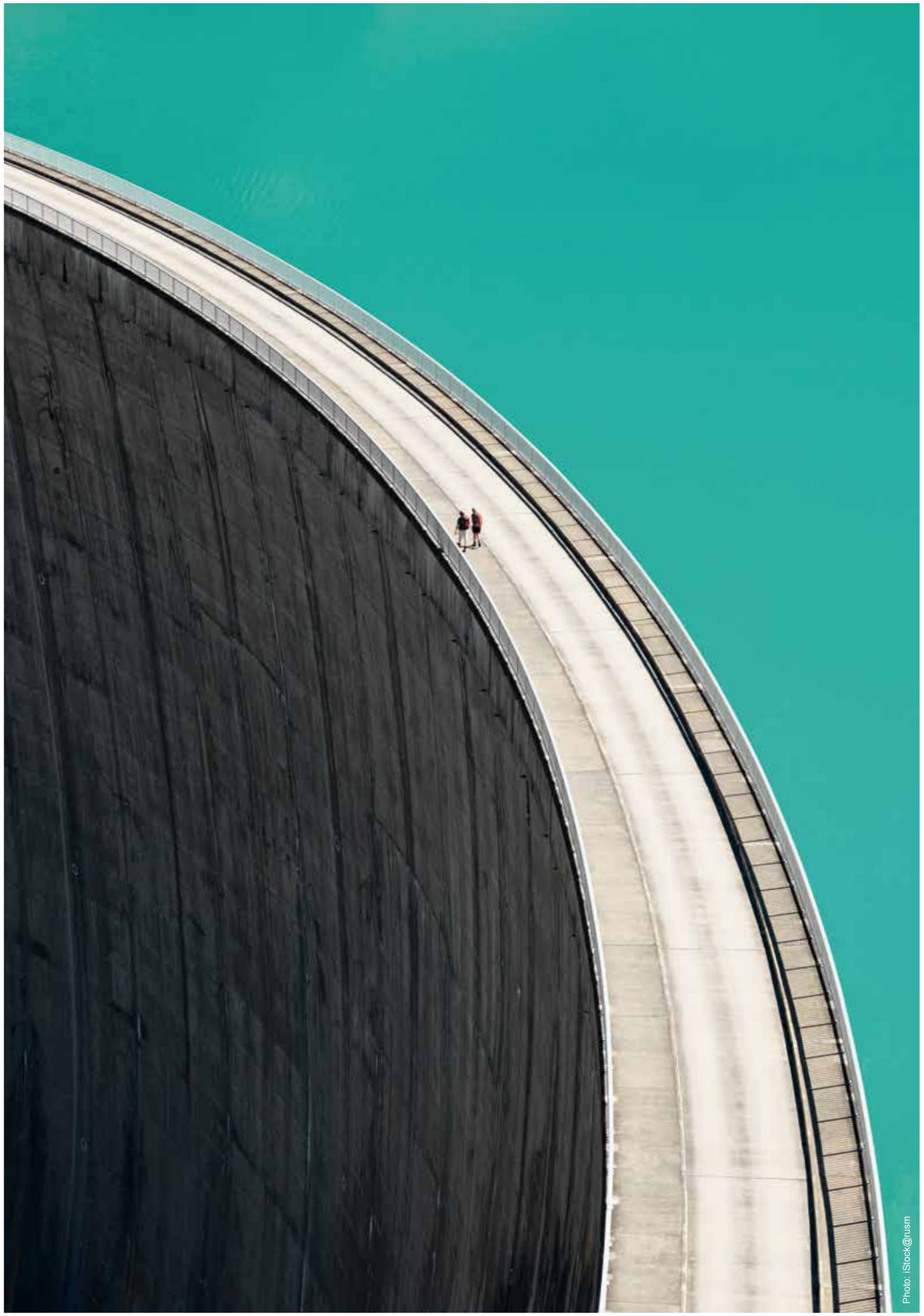

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For demanding concrete projects

# DURAHIT® – THE BRAND

## WHAT IS DURAHIT®

DURAHIT® is a brand dedicated to concrete that is used in projects with advanced requirements on quality and durability. Our DURAHIT® product line has been especially designed to produce and protect this high-quality, durable, and waterproofed concrete. This provides:

- Powerful protection
- High in performance
- Contribution to a durable and sustainable use of concrete

## WHICH PRODUCTS ARE INCLUDED?

Our DURAHIT® line includes various products consisting of different compositions and covers:

- Integral waterproofing admixtures
- Integral crystalline waterproofing additives
- Deeply penetrating hydrophobic impregnations

## WHAT ARE THEY SUITABLE FOR?

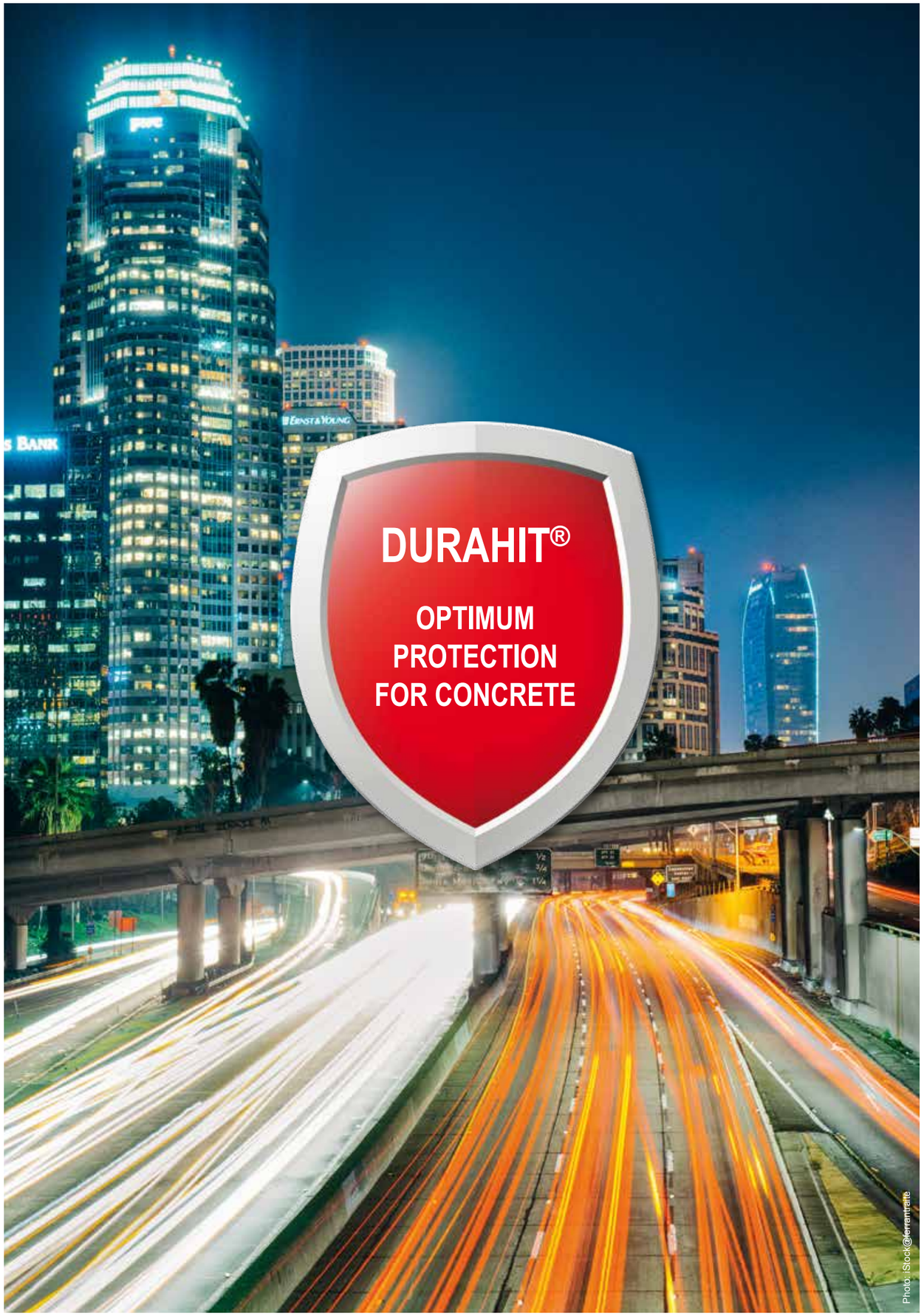
DURAHIT® is designed for concrete performing under challenging conditions. The products support concrete in withstanding extreme weather conditions, marine environments and watery surroundings. The waterproofing products achieves a very effective protection mechanism which provides the following benefits:

- Improved water impermeability
- Increased durability
- Decreased steel corrosion
- Enhanced resistance against visual deficiently signs like effloresces

## APPLICATION AREAS

As the included products made of different compositions, our DURAHIT® line covers a wide application area that includes, but is not limited to:

- Swimming pools and reservoirs
- Sewage and water treatment plants
- Drainage constructions and water retaining constructions
- Foundations and basements floors
- Concrete walls
- Precast concrete elements
- Tunnel and underground constructions
- Bridge and infrastructure constructions
- Reinforced concrete constructions in marine environment




One brand – several benefits

# ADVANTAGES OF DURAHIT®

## TECHNICAL BENEFITS

Since reactions take place inside the matrix of the concrete, DURAHIT® products become an integral part of the concrete mass and thus cannot be removed or worn off later on. Apart from a durable protection, concrete produced or treated with DURAHIT® products impart additional benefits such as:

- Permanent waterproofing
- Permanent protection
- Optimum water repellence
- Increased oil, fuel and acid repellence
- Improved freeze-thaw salt resistance
- Enhanced resistance to defects
- Decreased risk of steel corrosion

## ECONOMICAL & AESTEHICAL BENEFITS

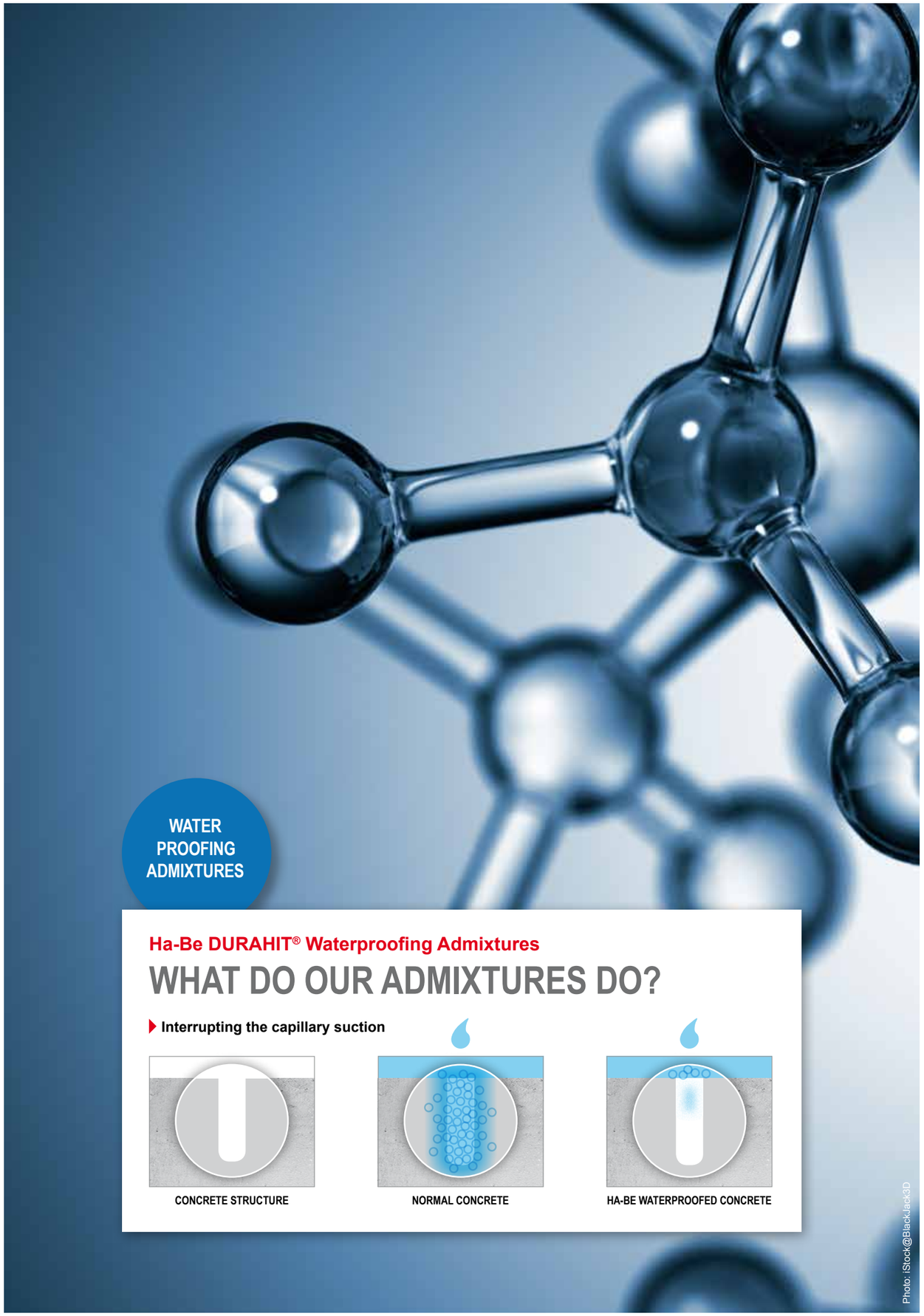
A high-quality and durable protection leads to even further benefits and is subsequently conducive to:

- Cost reduction for maintenance, repairs, and replacements
- Preservation of colour and aesthetic appearance
- Increased service life

## ENVIRONMENTAL BENEFITS

DURAHIT® is dedicated to durability and makes an important contribution towards an environment-friendly and energy-saving use of concrete and raw materials

- Long-term performance of concrete
- Less replacements
- Higher durability
- More sustainability




Our Durahit® WP-Line

# WATERPROOFING ADMIXTURES

## APPLICATION RANGE

DURAHIT® WP integral waterproofing admixtures have been designed to be suitable for almost any concrete structure exposed to moisture, salt or salt water, wicking, or water under hydrostatic pressure. Typical applications are:

- Swimming pools and reservoirs
- Sewage and water treatment plants
- Basements and foundations
- Water retraining and drainage constructions
- Tunnels and underground structures
- Concrete constructions in marine environments or with seawater contact

## WORKING PRINCIPLE: INTERRUPTION OF CAPLILLARY SUCTION

DURAHIT® WP interrupts the capillary suction by lining the capillaries with a hydrophobic material to prevent water being drawn in. This reduces the water uptake significantly. The waterproofing admixtures provide advantages such as:

- Integral waterproofing
- Permanent system
- Does not block the capillary pore structure and allows concrete to breathe

## BENEFITS

As DURAHIT® WP becomes an integral part of the concrete matrix, benefits apply to the entire concrete structure and thus achieve a very effective protection mechanism, which provides benefits such as:

- Optimum water repellence
- Minimised efflorescence
- Decreased risk of steel corrosion
- Reduced risk of carbonation
- Increased freeze-thaw salt resistance
- Enhanced durability
- Attractive long-term appearance
- Reduced maintenance costs

WATER
PROOFING
ADMIXTURES

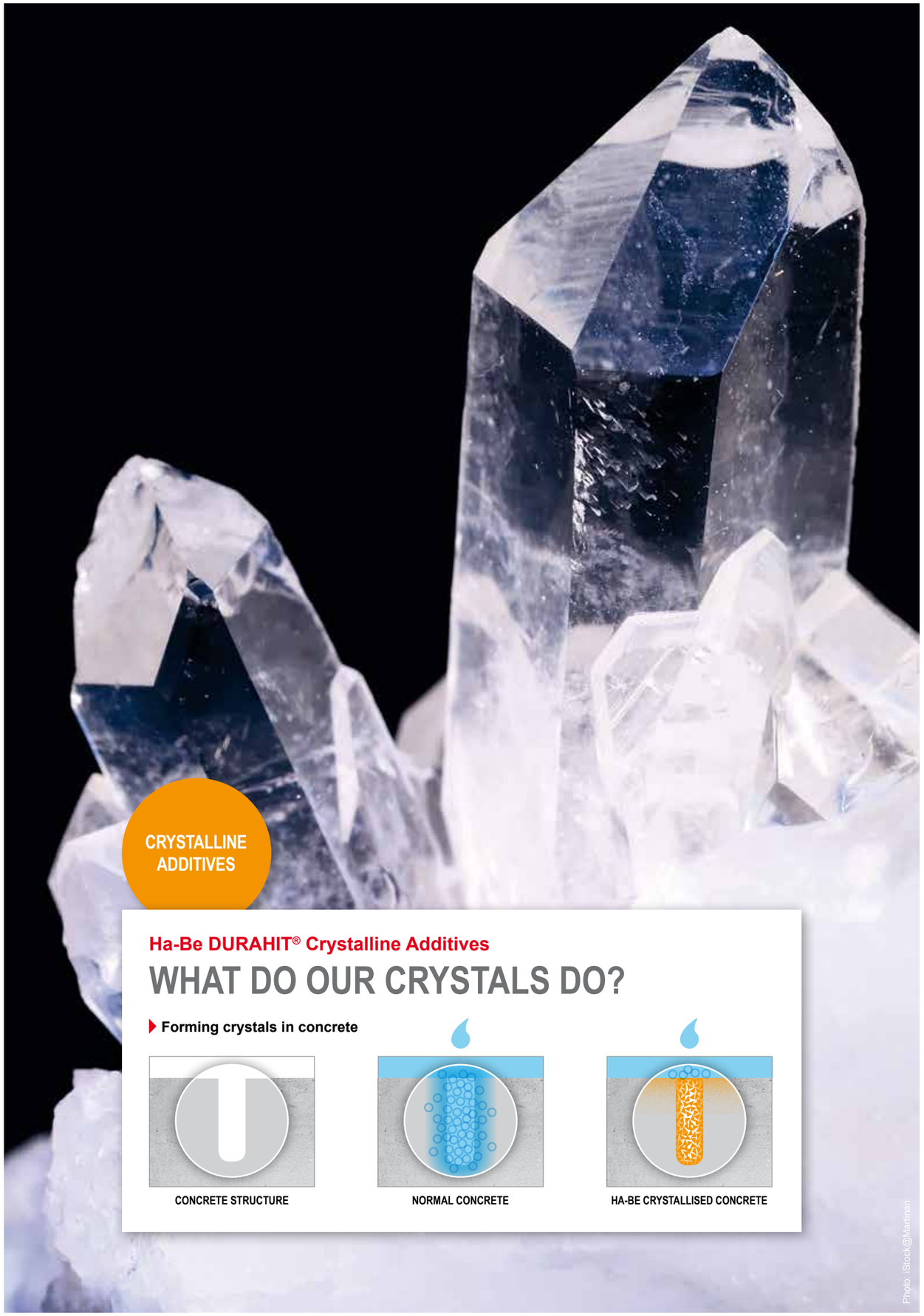



Photo: iStock@Martinan

Our Durahit® Crystal Ad-Line

# CRYSTALLINE ADDITIVES

## APPLICATION RANGE

The reactive, crystalline additives in dry powder form represent the ideal protection system for areas where increased resistance to chemicals, acids, and abrasion is required or whenever the concrete is subject to more extreme and continuous exposures or extreme hydrostatic pressure. Typical applications are:

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

## WORKING PRINCIPLE: CRYSTALS BLOCK WATER UPTAKE

At the time of batching, active chemicals diffuse and cause a catalytic reaction, which creates a non-soluble crystalline structure within the pores and capillary tracts of the entire concrete matrix. These crystalline deposits block both pores and micro cracks in the concrete, to prevent the passage of water.

- Integral system
- Pores and capillaries are blocked
- Reactivation whenever water is present

## BENEFITS

Any moisture introduced over the lifespan of the concrete will automatically initiate crystallisation, providing a permanent waterproofing protection. The crystalline deposits remain locked in the concrete matrix and reactivate whenever water is present. As the reaction continues over the life of the concrete, the protection lasts as long as the concrete, serving to seal not only initial shrinkage cracks, but also cracks that occur over time.

- Optimum water repellence
- Minimised efflorescence
- Decreased risk of steel corrosion
- Reduced risk of carbonation
- Increased freeze-thaw salt resistance
- Enhanced durability
- Attractive long-term appearance
- Reduced maintenance costs

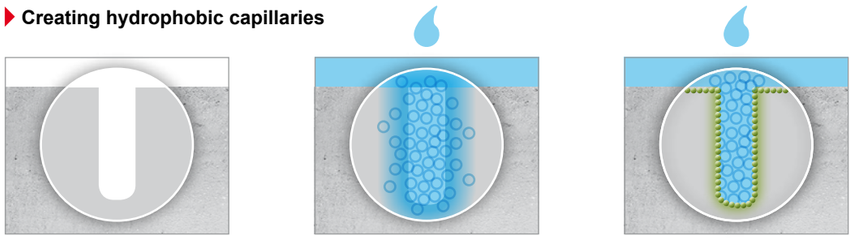
CRYSTALLINE ADDITIVES

IMPREGNATIONS

Ha-Be DURAHIT® Concrete Impregnations

## WHAT DO OUR IMPREGNATIONS DO?

- **Creating hydrophobic capillaries**




Our Durahit® Concrete Impregnation-Line

# IMPREGNATIONS

## APPLICATION RANGE

For optimum protection of concrete structures, an additional impregnation may be highly beneficial. Heavily stressed concrete structures that are subject to repeated splashing and drying cycles, require a deeply penetrating impregnation, which provides long-lasting and reliable protection. Areas of application include, but are not limited to:

- Concrete traffic areas in airport and road constructions
- Safety barriers .
- Tunnel and underground constructions
- Bridge constructions
- Constructions in marine environments and concretes with seawater contact

## WORKING PRINCIPLE: HYDROPHOBIC CAPILLARY SYSTEM

Impregnations are applied on concrete surfaces, where they deeply penetrate the surface pores and capillaries. It reacts with the reacts with its cement-based substrates in order to generate a hydrophobic capillary system. This effect reduces the capillary suction and decreases concrete's water absorption abilities. As a result the water uptake and its therein dissolved substances is minimised.

## BENEFITS

Impregnations effectively increase the durability of a concrete structure. Despite reducing permeability, they impart other beneficial characteristics like:

- Optimum water repellence
- Minimised efflorescence
- Decreased risk of steel corrosion
- Reduced risk of carbonation
- Increased freeze-thaw salt resistance
- Enhanced durability
- Attractive long-term appearance
- Reduced maintenance costs

IMPREGNATIONS

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