

# INTERPROOF

Crystal

Waterproof Concrete



## Crystalline Waterproofing

Reduced maintenance, extended service life



## Advanced Waterproofing with Crystalline Technology

INTERBETON, maintaining its commitment to sustainability and technological excellence, introduces to the Greek market the INTERPROOF Crystal® series of waterproof concrete. These state-of-the-art crystalline-technology concretes are engineered to ensure total watertightness by activating sealing mechanisms within pores and capillary microcracks—even years after installation. They are designed for projects where watertightness and long-term durability are essential performance requirements. INTERPROOF Crystal® concretes fully comply with the Concrete Technology Regulation (KTS 2016), combining proven technical reliability with extended service life, reduced maintenance requirements, and optimized environmental performance.

### Self-Healing & Durability Enabled by Advanced Technology

INTERPROOF Crystal® is a high-performance concrete designed for constructions where waterproofing, service life, and lifecycle cost are critical parameters. It is defined by:

- Very low porosity (pore structure, size, distribution, and connectivity)
- Low water–cement ratio
- Specially graded aggregates
- Optimized cement content and types

INTERPROOF Crystal® is further improved by crystalline self-sealing and self-healing technology, which remains active over time, “closing” pores and microcracks and ensuring long-term watertightness. This directly enhances durability and the sustainability of the structure. It is supported by an Environmental Product Declaration (EPD)\* and carries a VESTA™ A rating, validating its excellent environmental performance.

### Continuous Protection & Performance Over Time

The crystalline mechanism actively guards against chloride ingress and other harmful chemicals carried by water, reducing long-term deterioration of reinforced concrete. INTERPROOF Crystal® offers a modern approach to waterproofing and durability—built on innovation, scientific validation, and field performance. Its crystalline sealing technology activates when moisture is present, enabling self-healing and secondary waterproofing, even years after application.

In a time of increased environmental and construction needs, the INTERPROOF series offers a technically reliable and environmentally responsible solution. With INTERBETON’s quality assurance, it becomes a valuable tool for designers, engineers, and contractors aiming for high-performance, durable structures with lower maintenance costs

## Key BENEFITS

### Active Crystalline Waterproofing

Extremely low water penetration under pressure (<20 mm or <15 mm for C30/37, per EN 12390-8), ensuring high watertightness and robust protection against moisture and aggressive chemicals.

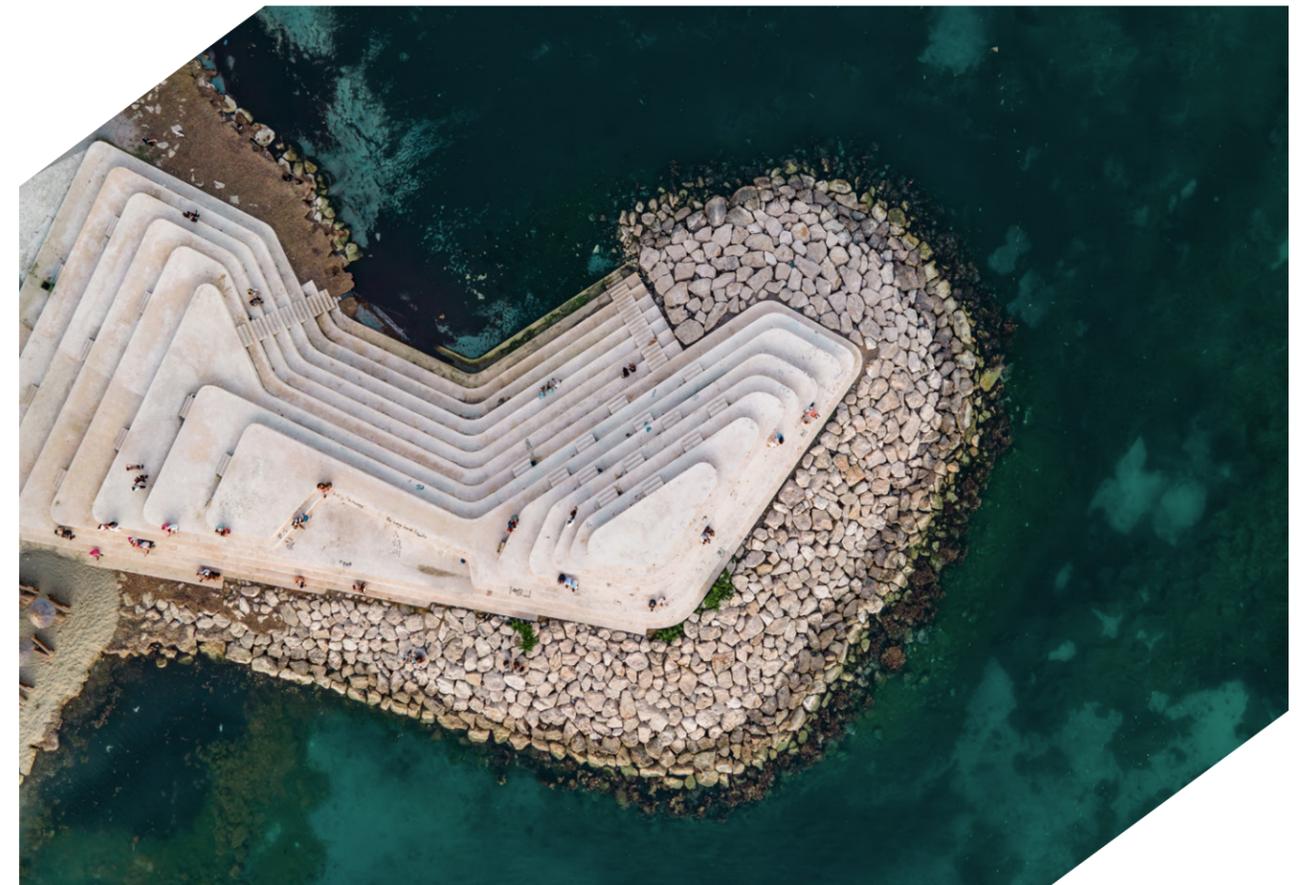
### Self-Healing of Microcracks

Crystalline self-healing mechanism for microcracks (<0.4 mm), activated by moisture and reactivated over time, providing continuous sealing and secondary waterproofing.

### Long-Term Durability & Reduced Lifecycle Cost

Low absorption (<2.5%) reduces ingress of aggressive agents, protects reinforcement, and significantly decreases maintenance requirements.

\* Environmental Product Declarations (EPDs) are certified documents that transparently report a product’s environmental performance across its full life cycle (CO<sub>2</sub> emissions, energy use, raw materials, etc.) according to international standards.



## Proven Technical Performance

INTERPROOF Crystal® incorporates an integrated crystalline sealing system that activates when exposed to moisture to provide long-lasting waterproofing. Crystalline admixtures form insoluble crystals within pores and microcracks (<0.4 mm), sealing the concrete's capillary network. The system is self-reactivating: it activates upon contact with water even years later.

It is certified according to EN 934-2 (Tables 9 & 2) and holds British Board of Agrément (BBA) approval for use in high-demand waterproofing applications such as tunnels, wastewater treatment tanks, swimming pools, basements, and rooftops. Its crack-sealing properties are confirmed by international academic studies.

INTERBETON's R&D ensures that the type and dosage of crystalline admixture used in INTERPROOF Crystal® deliver optimal performance—fully aligned with current cement types available in the Greek market.



For more information, you can refer to the INTERPROOF Crystal Technical Description brochure.

## Application Fields

INTERPROOF Crystal® is ideal for structures requiring high waterproofing performance, including:

- Water tanks
- Swimming pools
- Shafts & channels
- Roof slabs
- Wastewater treatment tanks
- Walls
- Underground structures
- Tunnels
- Piers & bridge decks

## Technical Characteristics

- High resistance to moisture and corrosion
- Self-healing of microcracks through crystalline activation in the presence of moisture
- Long-term secondary sealing of microcracks years after curing
- Reduced capillary absorption and overall permeability
- Engineered mix design with specially reduced porosity and permeability
- Strong resistance to chlorides, CO<sub>2</sub>, and sulfates in aggressive environments
- Exposure classes: XC1–XC4, XS1–XS3, XD1, XA1, XF1
- Extremely low water permeability (<20 mm or <15 mm for C30/37, EN 12390-8)
- Long-term durability and protection of reinforcement, reducing lifecycle costs
- Excellent workability (S4), easy placement, pumping, and compaction

Absorption values <2.5% (BS 1881-122) reduce freeze-thaw deterioration, scaling, and chemical attack.

INTERPROOF Crystal® exhibits water penetration of less than 20 mm (or <15 mm for the C30/37 grade), in accordance with EN 12390-8. This performance significantly reduces the ingress of water and water-soluble chemicals (Cl<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>), which cause reinforcement corrosion and material deterioration.

## Sustainability Through Durability

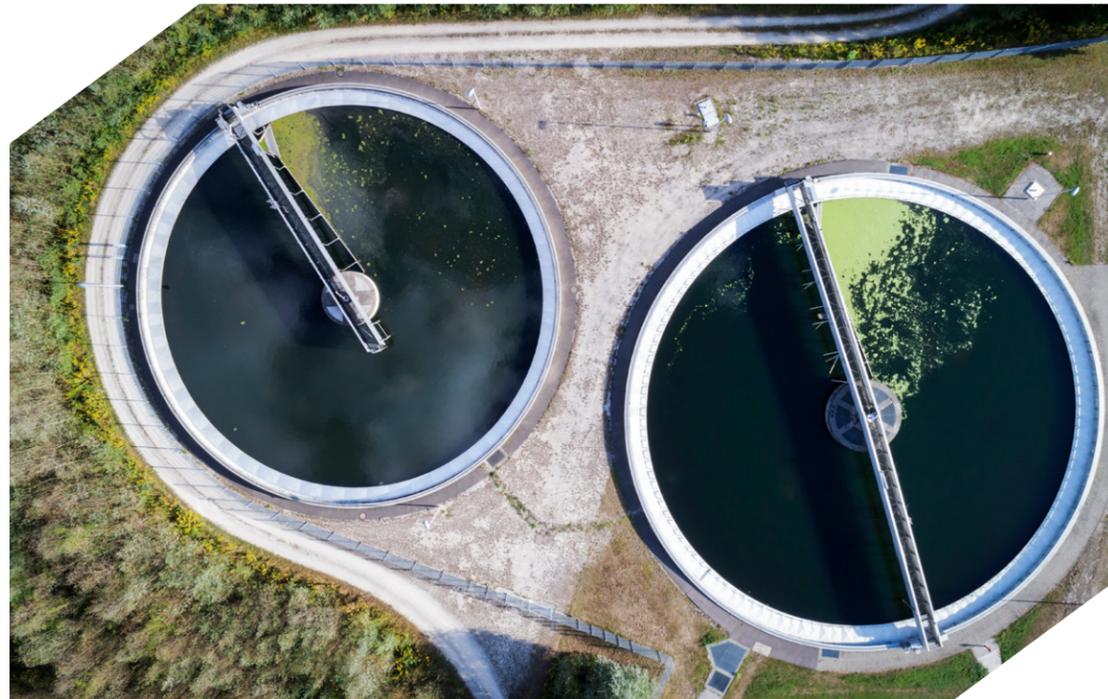
The superior watertightness of INTERPROOF Crystal® delivers significant environmental and operational benefits throughout the structure's service life.

### Reduced Maintenance & Repair Needs

High waterproofing performance reduces or eliminates the need for future repairs, such as re-sealing, injections, or patch repairs.

### Preserved Structural Integrity

Long-term reinforcement protection prevents swelling, cracking, and spalling—preserving structural capacity without deterioration.



## Site Advantages

INTERPROOF Crystal® is designed to simplify construction and reduce the likelihood of onsite defects:

- Ready-mixed industrial product with stable, predictable performance
- High workability (S4) for easy placement and compaction
- Reliable pumping without modifying rheology
- Minimizes defects: honeycombing, incomplete reinforcement coverage, edge failures
- Protects against chemical attack in harsh environments
- Suitable for hot or cold weather concreting under proper guidelines

## Application Requirements

To fully benefit from the product's performance:

- Develop a dedicated waterproofing design for the project
- Ensure proper concreting, vibration, and curing per regulations
- Seal joints and penetrations with hydrophilic or PVC waterstops
- Control environmental conditions during pouring (avoid heatwaves, frost, heavy rain)

## Exposure categories met by INTERPROOF Crystal®

according to KTS 16 and ELOT EN 206

	Carbonation-induced corrosion	Chloride-induced corrosion		Freeze-thaw attack	Chemical attack
		Seawater exposure	De-icing salts		
<b>INTERPROOF C25/30</b>	XC1, XC2, XC3	XS1, XS2	—	—	—
<b>INTERPROOF C30/37</b>	XC1, XC2, XC3, XC4	XS1, XS2, XS3	XD1	XF1	XA1

INTERBETON has developed the VESTA® system, a certified tool for assessing the environmental performance of its concretes, based on CO<sub>2</sub> footprint calculations and life cycle assessment. VESTA® has been implemented since 2022 and is certified by the independent body BV, accredited by ESYD.



Contact our team for more information  
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can support your project.

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