



Drymix

Crystalline powder admixture for integral waterproofing of concrete

Drykos® **Drymix** is a crystalline powder admixture designed for the integral waterproofing of concrete and to increase its durability over time. The special chemical formulation reacts with cement hydration by-products and the moisture present in the cementitious matrix, generating a network of insoluble crystals that develops within the capillary porosity of the concrete. This crystallization process permanently seals the pores and micro-cavities within the conglomerate structure, reducing permeability and preventing the penetration of water and aggressive agents from any direction.

The system also maintains self-healing properties: in the presence of new water infiltration, the crystalline process can reactivate, contributing to the closure of micro-cracks up to approximately 0.5 mm.

Drykos® **Drymix** is compatible with all cements complying with the UNI EN 197 standard and with the main admixtures and additions commonly used in concrete production. Thanks to its application versatility, the product can be used effectively both in on-site operations and in prefabrication processes, and is also suitable for shotcrete applications.

CHARACTERISTICS

Drykos Technology

Drykos® crystalline technology stands out for its efficiency thanks to a chemical reaction with moisture and cement hydration by-products. This process generates an insoluble crystalline complex within the pores, capillaries, and cavities of the concrete, which obstructs water penetration. This complex becomes an integral part of the concrete mass, ensuring resistance to water and aggressive chemical agents from any direction, promoting restoration and protection, imparting waterproof properties, and increasing durability and service life.

Certifications



EN 934-2
Concrete additives



POTABLE WATER

Coating suitable for contact with water intended for human consumption in accordance with Ministerial Decree 174/2004 and Legislative Decree 18/2023.



Main characteristics

- Integral waterproofing of the concrete mass
- Formation of insoluble crystals that seal capillary porosity
- Self-healing properties with closure of micro-cracks up to approximately 0.5 mm
- Waterproofing from any direction (positive and negative pressure)
- High resistance to hydrostatic pressures
- Improvement of concrete durability
- Protection of reinforcement from corrosion
- Chemical resistance in environments with pH between 3 and 11
- Compatibility with other concrete admixtures
- Does not modify the performance of fresh concrete or setting times
- Suitable for contact with potable water

Fields of use

- Foundations and underground structures
- Multi-story car parks
- Concrete slabs and roofs
- Tanks and reservoirs for water containment
- Water treatment plants
- Swimming pools and water basins
- Marine structures and port works
- Submerged structural elements
- Tunnels, galleries, and underground pipelines
- Bridges, viaducts, and dams

SPECIFICHE TECNICHE

Packaging

25 kg bucket

Color

Grey.

Appearance

Powder.

Shelf life

12 months from the production date.

Storage conditions

Store correctly in the original, sealed, intact packaging, protected from moisture and direct exposure to sunlight, at temperatures between +5°C and +35°C.



DRYKOS S.r.l.

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APPLICATION DATA

Theoretical consumption

1-2% by weight of the cement binder.

Coverage

Depending on the cement dosage per m³ of concrete.

Application temperature

Minimum +4°C | Maximum +40°C

APPLICATION INFO

Product preparation

Before use, Drykos® **Drymix** must be pre-mixed with water to obtain a fluid slurry suitable for subsequent introduction into the concrete.

As a guideline, a dilution of 1 part water to 2 parts product is recommended. Preparing the slurry facilitates the dispersion of the admixture within the cementitious mixture and ensures a uniform distribution of the active ingredient throughout the concrete mass.

Application

The resulting slurry is introduced directly into the truck mixer during the concrete batching phase, preferably while the mixer is in loading mode. Subsequently, it is necessary to mix the conglomerate for at least 5-10 minutes at maximum speed to ensure perfect homogenization of the admixture.

The recommended dosage of Drykos® **Drymix** is 1% by weight of the cement or binder content in the mixture. For shotcrete applications, the dosage can be increased up to 2% depending on specific application conditions.

Tool cleaning

Tools should be cleaned with water immediately after use.

Other indications

- The use of Drykos® **Drymix** must always be supported by an adequate concrete mix design. It is recommended to verify the compatibility of the product with the constituent materials of the mixture beforehand, particularly with local raw materials.
- The setting times of concrete treated with Drykos® **Drymix** can be influenced by various factors related to the composition of the mixture and the conditions of use, such as the type of cement used, the nature and grain size of the aggregates, the ambient and concrete temperature, as well as the specific characteristics of the mix design.
- It is advisable to perform preliminary qualification tests, especially when introducing new mix designs or starting new productions, to confirm the system's performance under specific conditions of use.
- Conditions of use: during the mixing of the product with the concrete, the temperature must be above +4°C.
- Drykos® **Drymix** is not suitable for sealing dynamic cracks or those subject to structural movement.
- Fresh concrete must be placed respecting the workability times provided for the mixture and must undergo adequate curing to ensure the correct development of mechanical performance and the durability of the conglomerate.
- During product handling, it is necessary to use appropriate personal protective equipment (gloves, goggles, and mask) and follow the instructions provided in the safety data sheet.
- For anything not covered, contact Technical Support at +39 0171 1874992 or write to info@drykos.com



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TECHNICAL PERFORMANCE

Characteristic	Test method	Standard requirements	Performance
Chloride content	EN 480-10	≤ 0.1% by mass	≤ 0.1% by mass
Alkali content	EN 480-12		9.05% by mass
Compressive strength	EN 12390-3	≥ 85% of the control sample	≥ 85% of the control sample
Capillary absorption	EN 480-5	Tested for 7 days after 7 days of curing: test mixture ≤50% by mass of the control mixture. Tested for 28 days after 90 days of curing: test mixture ≤60% by mass of the control mixture	Tested for 7 days after 7 days of curing: test mixture ≤50% by mass of the control mixture. Tested for 28 days after 90 days of curing: test mixture ≤60% by mass of the control mixture
Air content in fresh concrete	EN 12350-7	≤ 2% by volume	≤ 2% by volume
Hazardous substances			See SDS
Chemical resistance	ASTM C267	Comparison with non-admixed mixture	No significant variation for continuous exposure to solutions with pH 3–11
Freeze-thaw cycles	ASTM C666	Comparison with non-admixed mixture	After 300 cycles, the concrete maintains high performance with reduced dimensional variation compared to the control mixture
Rapid chloride permeability	ASTM C1202	Comparison with non-admixed mixture	Significant reduction in charge passed compared to the control mixture: -50%
Coating suitable for contact with water intended for human consumption	In accordance with Ministerial Decree 174/2004 and Legislative Decree 18/2023		Suitable

ENVIRONMENT AND SAFETY

Safety

For information and advice on safety, handling, storage, and disposal, users should refer to the most recent version of the Safety Data Sheet, which contains information on the physical, ecological, and toxicological characteristics of the product. If necessary, request the updated Safety Data Sheet by contacting Customer Service at +39 0171 1874992 or writing to info@drykos.com. Product complies with the requirements of Regulation (EC) No. 1907/2006 (REACH) and Annex XVII, item 47 and subsequent amendments and additions.

Use

Product for professional use.



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WARRANTIES AND LEGAL NOTES

Should the product be defective, the liability of Drykos S.r.l. shall be limited solely to its replacement. The information and instructions in this technical data sheet regarding the application and end-use of the products are provided in good faith and reflect current scientific and technical knowledge; however, they do not constitute any guarantee or assumption of liability regarding the final outcome of the work involving their use. Given the variety of operating conditions and external factors beyond the control of Drykos S.r.l. during execution, it is the user's responsibility to verify the product's suitability for the specific application, assuming all risks and liabilities. Drykos S.r.l. reserves the right to modify the properties of its products at any time. Always refer to the most recent version of the product's technical data sheet. This edition cancels and replaces all previous versions. The latest updated technical data sheets are available on our portal at www.drykos.com.



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