

DRYMIX ULTRA

**LIQUID CRYSTALLINE ADMIXTURE FOR
CONCRETE WATERPROOFING**

**FREE FROM CHLORIDES - COMPLIANT WITH STANDARD
EN 934-2 , P. 9 WATER RESISTANT ADMIXTURES**



PRODUCT DESCRIPTION

DRYMIX ULTRA is a **liquid water-based** active crystalline chemical admixture that waterproofs, protects and increases the durability of concrete structures. The latter depends significantly on the microstructural properties of concrete, such as porosity and pore size, through which aggressive gases and liquids can penetrate, causing degradation. The active chemical components of DRYMIX ULTRA react with moisture and hydration by-products of cement to form an insoluble crystalline complex within the capillary porosity, which becomes an integral part of the cement matrix and acts as an impermeable barrier against the penetration of water and chemicals from any direction. The consequence is that the whole mass of concrete is waterproofed and protected. The development of the crystalline formation is reactivated over time in presence of new infiltrations of water or humidity and is capable of sealing cracks up to 0.5 mm, exerting a self-healing action, which is essential, together with the considerable reduction in permeability, to increase the service life of concrete structures.

FEATURES

- Waterproofs the concrete mass and protects it permanently
- Resists extremely high hydrostatic pressures (positive and negative)
- Heals cracks up to 0.5 mm
- Reactivates in the presence of moisture and water
- Does not interfere with other additives present in concrete
- It is compatible with all types of cement
- Does not change the rheological properties of concrete
- Does not affect the workability of fresh concrete
- Resists to continuous chemical aggressions with pH levels between 3 and 11
- Provides permanent waterproofing and protection to the concrete mass
- Certified for use in contact with drinking water

ADVANTAGES

- DRYMIX ULTRA reduces waterproofing costs
- Allows a significant reduction in construction schedules because there is no need to wait for concrete curing times for the application of protective coatings.
- Significantly increases the durability of concrete as, by sealing the pores, it prevents the ingress of water and aggressive chemicals, preventing oxidation and corrosion of the reinforcement bars.
- Its self-sealing properties reduce the cost of maintenance and repair for concrete structures.
- Does not contain VOCs, it is REACH compliant and EPD certified

GREEN TECHNOLOGY

DRYMIX ULTRA is an environmentally friendly product that uses the chemistry of cement to fulfil its function, thus allowing it to be 100% recyclable in the future and avoiding the use of coating materials that would require high disposal costs.

DRYMIX ULTRA therefore contributes to LEED credits.

AREAS OF APPLICATION

- Foundations
- Multi-storey car parks
- Roof slabs
- Tanks and reservoirs
- Water treatment plants
- Swimming pools
- Water basins

- Submerged elements
- Marine structures
- Tunnels and metro
- Underground pipelines
- Bridges, viaducts, dams

DOSAGE

The dosage of DRYMIX ULTRA is 1% per 100 kg of cementitious materials

INSTRUCTIONS FOR USE

DRYMIX ULTRA must be added in the prescribed quantities to the concrete when mixing.

The sequence of procedures for admixing the product will differ depending on the type of mixing:

Dry loading in the ready mix truck at the batching plant: DRYMIX ULTRA must be introduced after all cementitious materials have been added, followed by 80%-100% of the water and the plasticizer. It must always be the last additive introduced, either along with the remaining 10%-20% of water or directly after all other materials. The addition can be made through the automatic dosing unit connected to the batching plant management system, or alternatively via a manual dosing unit if necessary.

Loading in the pre-mixer at the batching plant: DRYMIX ULTRA must be introduced after all other components have been added to the pre-mixer, ideally along with the final 10%-20% of the remaining water or directly after the main batch to ensure complete integration.

Dosing on the job site: DRYMIX ULTRA must be poured into the inlet of the ready-mix truck while the drum is rotating. It is essential to mix the load for 6 to 10 minutes at moderate speed to ensure the product is uniformly distributed throughout the concrete.

CHEMICAL-PHYSICAL CHARACTERISTICS

- DRYMIX ULTRA, under normal conditions, ensures the maintenance of the slump
- The appearance of the concrete with DRYMIX ULTRA is a more cohesive and bound mixture.
- Concrete with DRYMIX ULTRA, due to the intrinsic characteristics of the product, can develop higher final compressive strengths than concrete without the admixture
- For large projects it is recommended to carry out preliminary tests with the mixes to be used.

DRYBOXSYSTEM

Concrete admixed with DRYMIX ULTRA is the most important element in the creation of a waterproof structure, but also the type and quality of the accessories required for the sealing of construction and movement joints, passing pipes, formwork spacers, etc. are extremely important. Please consult the DRYBOXSYSTEM application protocol available on our website www.drykos.com. DRYKOS Technical Department is at your disposal for a customised study of your project.

LIMITATIONS

When mixing DRYKOS DRYMIX ULTRA with concrete, the temperature must be above 4°C. DRYMIX ULTRA is an effective waterproofing tool for rigid concrete structures, but it cannot effectively seal dynamic cracks or those subject to movement.

HEALTH AND SAFETY

DRYMIX ULTRA contains chemical agents that can cause skin irritation. It is recommended to wear gloves and goggles when handling the product and to follow the precautions for handling chemical products. For further and complete information regarding the safe use of the product, it is recommended to consult the Safety Data Sheet.



STORAGE

The product must be stored in a dry place. In its original and sealed packaging, the product can be stored for 12 months.

PACKAGING

Available in 25 litre cans and 1000 litre IBC tanks

TECHNICAL DATA

Test description	Test methods	Minimum regulatory requirements	DRYMIX ULTRA
Chloride content	UNI EN 480-10	≤ 0,10% in mass	None
Colore	—	—	Incolore
pH	—	—	9,5 +/- 1
Specific Gravity	ISO 758	At 20° C	1,12 ± 0,02 (g/cm³)
Chloride content	UNI EN 480-10	≤ 0,10% in mass	None
Alcali content	UNI EN 480-12		
Chloride content	UNI EN 480-10	No minimum requisite	≤6,05% in mass
Capillary absorption	UNI EN 480-5	Tested at 7days after 7 days curing: test mix should be ≤50 % in mass compared to control mix Tested at 28 days after 90 day curing: test mix should be ≤60 % in mass compared to control mix	Mix with DRYMIX ULTRA: - at 7 days < 61% in mass compared to the control mix - at 28 days < 70% in mass compared to control mix
Compressive Strength	UNI EN 12390-3	At 28 days: test mix ≥85% of control mix	≥100% of control mix
Air content in fresh concrete	UNI EN 12350-7	Test mix ≤2% by volume above the control mixture unless otherwise stated by the manufacturer	Mix with DRYMIX ULTRA: ≤2% by volume above the control mix
Water permeability	UNI EN 12390-8	No minimum requirements	Mix with DRYMIX ULTRA: >40% reduction in penetration compared to control mix
Chemical resistance	ASTM C-267-77	Comparison with a mixture without additives	No variation between pH 3 and 11 with constant contact
Materials in contact with drinking water	D.M. 174/2004	Compliance with the parameters – Annex II	Compliant
Materials in contact with drinking water	NSF 61	Compliance with the parameters	Compliant



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