



Drymortar Tix

Thixotropic structural cementitious mortar, fiber-reinforced, with crystallizing technology for restoration and active waterproofing of concrete

Drykos® **Drymortar Tix** is a single-component structural cementitious mortar, thixotropic, fiber-reinforced and shrinkage-compensated, developed for restoration and reconstruction of degraded concrete structures. The product is formulated with high-strength cements, super-pozzolanic fillers, selected aggregates and polymeric fibers, integrated with Drykos crystallizing technology, which enables the formation of insoluble crystalline complexes within the cementitious matrix. These crystals, developing in the pores and capillaries of the substrate, create an active waterproofing system capable of blocking water penetration even under pressure and protecting the concrete from aggressive agents and chlorides. The crystallizing reaction reactivates over time in the presence of moisture, progressively reducing material permeability and promoting self-healing phenomena of microcracks. Thanks to its thixotropic rheology, Drykos® **Drymortar Tix** can be applied vertically and overhead, ensuring excellent workability, absence of sagging and thickness stability. After hardening, the product exhibits high compressive and flexural strength, excellent adhesion to concrete and reinforcement, high impermeability and resistance to atmospheric agents, freeze-thaw cycles and aggressive environments. Unlike traditional mortars, Drykos® **Drymortar Tix** does not merely provide mechanical restoration of the substrate, but creates an integrated waterproof barrier within the structure, significantly increasing the durability and protection of the intervention.

CHARACTERISTICS

Drykos Technology

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

Certifications



EN 1504-3

Products and systems for the protection and repair of concrete structures - Structural and non-structural repair

Main characteristics

- Structural mortar certified Class R4 according to EN 1504-3
- Drykos crystallizing technology
- Self-healing effect over time
- Integral waterproofing of the matrix
- High adhesion to concrete and steel
- Fiber-reinforced with high crack resistance
- Shrinkage-compensated and dimensional stability
- High mechanical strength
- Excellent workability and thixotropy
- Resistance to freeze-thaw cycles and aggressive agents
- High durability even in marine and industrial environments
- Applicable by trowel, spatula or spray

Fields of use

- Restoration of columns, beams, balconies and reinforced concrete structures
- Reconstruction of degraded concrete cover
- Repair of vertical and overhead surfaces
- High-performance protective coatings
- Hydraulic works (pipelines, dams, tunnels)
- Marine structures and aggressive environments
- Restoration of industrial flooring
- Interventions on infrastructure subject to high loads and stresses

Green Technology & LEED

Product formulated to reduce environmental impact, characterized by very low VOC emissions (Very Low Emission), suitable for contributing to LEED credits for indoor air quality and compliant, where applicable, with CAM (Minimum Environmental Criteria) requirements, also thanks to recycled material content.

SPECIFICHE TECNICHE

Packaging

25 kg bag

Color

Gray.

Appearance

Powder.

Shelf life

12 months from production date.

Storage conditions

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



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APPLICATION DATA

Theoretical consumption

~ 20 kg/m² per cm of thickness

Thinner

Water.

Coverage

~ 2,000 kg per m³ of mortar

Application temperature

Minimum +5°C | Maximum +35°C

APPLICATION INFO

Substrate preparation

Substrates must be sound, clean, free from dust, oils, greases, loose or degraded parts. It is necessary to remove deteriorated concrete until sound and resistant substrate is reached. Surfaces must be adequately roughened by scarification, sandblasting or high-pressure hydro-scarification to ensure high adhesion.

Oxidized reinforcement must be exposed and cleaned by brushing or sandblasting and properly treated by applying Drykos® **Renov Steel**.

Before application, the substrate must be saturated with water to a saturated surface-dry (SSD) condition.

Product preparation

Drykos® **Drymortar Tix** is a single-component mortar to be mixed exclusively with clean water. Pour approximately 2/3 of the required mixing water into the mixing container, then gradually add the powder product under continuous agitation, avoiding lump formation. Subsequently complete with the remaining water quantity until the desired consistency is achieved. The water/product ratio is approximately 16-17% by weight, about 4-4.25 liters per 25 kg bag. Do not exceed the recommended water quantity to avoid reductions in mechanical performance and product durability and the effectiveness of the crystallizing system. Mixing must be performed using a mechanical agitator at low speed (~ 300–500 rpm) for at least 3-5 minutes, until a homogeneous, plastic mixture free of agglomerates is obtained. If necessary, let the mixture rest for about 1-2 minutes and briefly remix before application. It is recommended to prepare only the quantity of product that can be applied within the workability time.

Application

Drykos® **Drymortar Tix** can be applied by trowel, spatula, float or by spray with equipment suitable for thixotropic mortars. Application must be performed on a previously prepared, clean substrate brought to a saturated surface-dry (SSD) condition. Before placement, it is recommended to remove any excess surface water.

The product must be applied exerting adequate pressure on the substrate to promote penetration into pores and ensure maximum adhesion, avoiding the formation of voids or discontinuities. In the presence of exposed reinforcement, ensure that the material completely encases the bars.

Application can be performed in one or more layers, depending on the required thickness. Thanks to its thixotropic consistency, Drykos® **Drymortar Tix** allows vertical and overhead applications without sagging, with indicative thicknesses from 8 to 30 mm per single layer. For greater thicknesses or in the presence of significant structural stresses, it is necessary to provide reinforcement properly anchored to the substrate to ensure stability and structural continuity of the intervention. Between layers, if necessary, it is recommended to apply the subsequent layer on a still-fresh substrate or, in case of hardening, after adequate surface preparation by roughening and moistening. During application avoid unfavorable environmental conditions such as strong solar radiation, intense wind or high temperatures, which could cause rapid evaporation of mixing water and compromise proper curing of the product. After application, it is essential to ensure proper moist curing for at least 24-48 hours to promote strength development and optimal activation of the crystallizing system. Over time, in the presence of water or moisture, the crystalline system continues to develop within the cementitious matrix, progressively improving impermeability and contributing to self-healing phenomena.



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Tool cleaning

Clean tools with water immediately after use. Hardened product can only be removed mechanically.

Other indications

- Do not apply on frozen substrates, during thawing or at temperatures below +5°C or above +35°C
- Avoid application in the presence of strong solar radiation, intense wind or low relative humidity, conditions that can cause rapid evaporation of mixing water and compromise final performance
- Do not apply on inadequately prepared, loose surfaces contaminated by oils, greases, dust or pre-existing treatments that may reduce adhesion
- Do not exceed the mixing water beyond the indicated amount to avoid reductions in mechanical strength, increased shrinkage and decreased durability
- For high thicknesses or structural applications, provide suitable reinforcement and anchoring systems to the substrate
- Protect freshly applied surfaces from rain, frost, wind and direct radiation for at least 24–48 hours
- Properly cure by moistening or protective systems to prevent plastic shrinkage cracking phenomena
- Do not apply on non-absorbent or water-saturated substrates with surface liquid film present
- Use the product within the expected workability time; do not remix by adding water to product during setting
- For anything not covered, contact Technical Support at +39 0171 1874992 or write to info@drykos.com

TECHNICAL PERFORMANCE

Characteristic	Test method	Standard requirements	Performance
Bulk density	EN 1015-6		2,320 kg/m ³
Pot life			~ 20 minutes
Minimum recommended thickness			8 mm
Maximum recommended thickness			30 mm
Mixing water			16-17%
Compressive strength at 24 hours	EN 12190		22 N/mm ²
Compressive strength at 7 days	EN 12190		45 N/mm ²
Compressive strength at 28 days	EN 12190	Structural - Class R3 ≥ 25 N/mm ² Class R4 ≥ 45 N/mm ²	Class R4: 57 N/mm ²
Flexural strength at 24 hours	EN 196-1		4.5 N/mm ²
Flexural strength at 7 days	EN 196-1		7 N/mm ²
Flexural strength at 28 days	EN 196-1		7.5 N/mm ²
Chloride ion content	EN 1015-17	≤ 0.05%	0.01%
Bond strength	EN 1542	Structural - Class R3 ≥ 1.5 N/mm ² Class R4 ≥ 2.0 N/mm ²	Class R4: ≥ 2 N/mm ²
Carbonation resistance	EN 13295	dk ≤ control concrete	0.5 mm
Elastic modulus	EN 13412	≥ 20 kN/mm ²	25 kN/mm ²



Characteristic	Test method	Standard requirements	Performance
Thermal compatibility Part 1, freeze-thaw	EN 13687-1	$\geq 2.0 \text{ N/mm}^2$	$\geq 2.0 \text{ N/mm}^2$
Skid resistance	EN 13036-4	Structural - Class I: > 40 units wet test Class II: > 40 units dry test Class III: > 55 units wet test	Class III
Capillary absorption	EN 13057	$\leq 0.5 \text{ kg} \cdot \text{h}^{0.5}/\text{m}^2$	$0.3 \text{ kg} \cdot \text{h}^{0.5}/\text{m}^2$
Reaction to fire	EN 13501-1		Class A1
CAM - Total recycled material content	UNI PdR 88		$\geq 4.5\%$

ENVIRONMENT AND SAFETY

VOC

Very Low Emission ($70 \mu\text{g}/\text{m}^3$).

Safety

For information and advice on safety, handling, storage, and disposal, users of the product must refer to the most recent version of the Safety Data Sheet, which provides 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 compliant with the requirements of Regulation (EC) No. 1907/2006 (REACH) and Annex XVII, entry 47 and subsequent amendments and additions.

Use

For professional use.

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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