



Drymortar P

Pourable shrinkage-compensated structural repair mortar for restoration, reconstruction, and anchoring with crystallizing technology for active restoration and waterproofing of concrete

Drykos® **Drymortar P** is a single-component, pourable, rheoplastic, shrinkage-compensated structural cementitious mortar designed for restoration, reconstruction, and consolidation of concrete structures. The product is formulated with high-strength cements, super-pozzolanic fillers, selected aggregates with a maximum diameter of 6 mm, shrinkage-compensating and polymer-modifying additives capable of providing high mechanical performance, durability, and dimensional stability, 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 the permeability of the material and promoting self-healing phenomena in microcracks.

Thanks to its high fluidity and self-leveling capacity, Drykos® **Drymortar P** enables poured or pumped casting even in complex geometries, ensuring complete filling of volumes and excellent adhesion to the substrate and reinforcement. After hardening, the product develops high mechanical strength, low water permeability, and excellent resistance to aggressive agents, making it particularly suitable for structural applications even in severe environments. Unlike traditional mortars, Drykos® **Drymortar P** 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



EN 1504-6

Products and systems for the protection and repair of concrete structures - Anchoring of steel reinforcement



EN 998-1

Specification for mortar for masonry - Rendering and plastering mortar



DRYKOS S.r.l.

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Last update 07/04/2026

Main characteristics

- High fluidity and self-leveling capacity
- Complete filling of volumes without segregation
- Compensated shrinkage and dimensional stability
- High mechanical strength
- Excellent adhesion to concrete and steel
- High impermeability and resistance to carbonation
- High durability even in aggressive environments
- Suitable for pumped or poured casting
- Can be applied even at high thicknesses
- Compatible with Drykos restoration systems

Fields of use

- Structural restoration of concrete elements
- Section increases and consolidations
- Drykos crystallizing technology
- Self-healing effect over time
- Integral waterproofing of the matrix
- Structural anchoring and large-dimension embedments
- Under-plate filling and machinery foundations
- Grouting and jacketing works
- Extrados reinforcement of reinforced concrete slabs
- Repair of industrial flooring
- Construction of structural joints and infrastructure works

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 its 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 the 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

~ 23 kg/m² per cm of thickness

Thinner

Water.

Coverage

~ 2,300 kg per m³ of mortar

Application temperature

Minimum +5°C | Maximum +35°C

APPLICATION INFO

Substrate preparation

The substrate must be carefully prepared in advance to ensure maximum adhesion and durability of the system. Complete removal of degraded, loose, or contaminated concrete is necessary until sound and resistant substrate is reached. Surfaces must be properly roughened by mechanical scarification, sandblasting, or preferably high-pressure hydro-scarification to obtain adequate roughness for mortar anchoring. Any exposed reinforcement must be exposed, cleaned of rust by brushing or sandblasting to clean metal grade and, if necessary, treated with Drykos® **Renov Steel** passivator, depending on exposure conditions and intervention timing.

Before application, the substrate must be saturated with water to a "saturated surface dry (SSD)" condition, carefully removing any surface ponding. Rigid, watertight, and perfectly sealed formwork must be prepared, suitable for containing the pressure of the pour and preventing mortar leakage. Formwork surfaces must be treated with suitable release agents to facilitate removal operations.

Product preparation

Drykos® **Drymortar P** is a single-component mortar to be mixed with clean water until a fluid, homogeneous, lump-free mixture suitable for pouring is obtained. Pour approximately 2/3 of the planned mixing water into the mixer, then gradually add the powder product under continuous agitation. Subsequently complete with the remaining water until the desired consistency is achieved. Mixing must be performed using a concrete mixer or low-speed mechanical agitator for a minimum of 3-5 minutes until a perfectly uniform mix is obtained, free of agglomerates and with adequate fluidity.

The water/product ratio is approximately 11-12% by weight, about 2.75-3 liters per 25 kg bag, and must be strictly observed to avoid segregation, bleeding, or reduction in mechanical performance. For high-thickness filling, the addition of selected aggregates (such as clean gravel of appropriate grain size) may be considered according to design specifications.

It is recommended to prepare only the amount of material that can be applied within the workability time.



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Application

Drykos® **Drymortar P** must be applied by continuous pouring or pumping within previously prepared and sealed formwork. The pour should preferably be performed from one side of the formwork to promote uniform advancement of the mortar and progressive expulsion of air, avoiding the formation of voids, cavities, or discontinuities. Thanks to its rheoplastic and self-compacting nature, the product can completely fill even complex volumes and congested sections, ensuring perfect encasement of reinforcement and high adhesion to the substrate.

The use of vibration should be limited to what is strictly necessary: excessive vibration can compromise the stability of the mix and the final quality of the pour. During placement, it is essential to maintain operational continuity, avoiding interruptions that could generate cold joints. In case of pour resumption, the surface must be properly prepared before subsequent application. For high thicknesses, the pour can be performed in multiple phases or the use of supplementary aggregates may be considered, depending on project specifications.

During application, avoid unfavorable environmental conditions such as high temperatures, strong wind, or direct radiation, which can accelerate water evaporation and compromise proper curing of the material. 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.

Tool cleaning

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

Other indications

- Do not apply at temperatures below +5°C or above +35°C, or when there is a risk of frost during the initial hardening phases
- Avoid application on frozen, loose, contaminated, or inadequately prepared substrates, as this may compromise the adhesion and final performance of the system
- Do not exceed the recommended mixing water values to avoid segregation, reduction in mechanical strength, and loss of effectiveness of the crystallizing system
- Do not remix the product by adding water after the onset of setting
- Apply the product within the workability time and prepare only the quantity necessary for immediate use
- In unfavorable climatic conditions (high temperatures, wind, low relative humidity), adopt adequate protective measures to prevent rapid evaporation of mixing water
- Carefully ensure moist curing for at least 24-48 hours by water misting, covering with sheets, or using anti-evaporation systems to ensure proper development of mechanical strength and optimal activation of the crystallizing process
- For applications in environments in continuous contact with water (tanks, reservoirs), allow adequate curing time before commissioning
- 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			30-40 minutes
Minimum recommended thickness			3 cm
Maximum recommended thickness			15 cm



Characteristic	Test method	Standard requirements	Performance
Mixing water			11-12%
Compressive strength after 24 hours	EN 12190		24 N/mm ²
Compressive strength after 7 days	EN 12190		58 N/mm ²
Compressive strength after 28 days	EN 12190	Structural - Class R3 ≥ 25 N/mm ² Class R4 ≥ 45 N/mm ²	Class R4: 75 N/mm ²
Flexural strength after 24 hours	EN 196-1		5.6 N/mm ²
Flexural strength after 7 days	EN 196-1		8.5 N/mm ²
Flexural strength after 28 days	EN 196-1		8.6 N/mm ²
Chloride 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
Pull-out resistance of ribbed steel bar	EN 1881	≤ 0.6 mm with load of 75 kN	≤ 0.6 mm
Resistance to carbonation	EN 13295	dk ≤ control concrete	Pass
Elastic modulus	EN 13412	≥ 20 kN/mm ²	30 kN/mm ²
Skid resistance	EN 13036-4	Structural - Class I: > 40 units with wet test Class II: > 40 units with dry test Class III: > 55 units with wet test	Class II
Determination of thermal compatibility	EN 13687-1		≥ 2 N/mm ²
Capillary absorption	EN 13057	≤ 0.5 kg·h ^{0.5} /m ²	0.2 kg·h ^{0.5} /m ²
Thermal conductivity	EN 12664		0.82 W/mK
CAM - Total recycled material content	UNI PdR 88		≥ 3.0%
Reaction to fire	EN 13501-1		Class A1



ENVIRONMENT AND SAFETY

VOC

Very Low Emission (70 µg/m³).

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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