

## Hydro Osmo K

Single-component cementitious mortar with osmotic action, certified according to UNI EN 1504-2, specifically for the rigid waterproofing of concrete, masonry and plaster

**Hydro Osmo K** is a single-component, waterproofing, polymer-modified cementitious mortar made of high-strength hydraulic binders, selected aggregates, special additives and adhesion promoters. **Hydro Osmo K**, when mixed with water, creates a continuous waterproof coating with excellent breathability and resistance to abrasion and freeze-thaw cycles. Resulting from research by **Licata SpA labs**, **Hydro Osmo K** has a high binding strength and superficial mechanical resistance. Easy to work, it can be applied by spraying, with a float or brush. The excellent resistance to indirect hydrostatic thrust and rapid setting, both direct and indirect, are the added values to which the **Licata SpA R&D** team has dedicated specific studies. **Hydro Osmo K** meets the requirements laid down by **UNI EN 1504-2** coating (C) according to the principles: **PI, MC** and **IR**.



### MAIN FIELDS OF USE

**Hydro Osmo K** has been formulated to ensure the best performance in waterproofing and protecting the most commonly used concrete substrates in building when crack bridging ability is not required. **Hydro Osmo K** can be applied either by spraying, float or brush, effectively meeting all the application requirements of a construction site. IT is suitable for waterproofing:

- Vessels
- Cisterns
- Channels
- Tanks
- Hydraulic tunnels
- Retaining walls
- Underground structures
- Shafts
- Lift shafts.

**Hydro Osmo K** can be used both as a final and intermediate layer before painting and applying decorative coatings. To apply on different substrates, please contact our technical department.

### CHARACTERISTICS

- Specifically for the protection of concrete. Thanks to the special formulation, **Hydro Osmo K** prevents the penetration of CO<sub>2</sub> from the atmosphere, thus protecting the concrete underneath from the negative effects of carbonation. It also meets the requirements laid down by **UNI EN 1504-2** coating (C) according to the principles: **PI, MC** and **IR**.
- Excellent resistance to direct and indirect hydrostatic thrust which is essential for a good waterproofing coating, thus allowing it to combat the penetration of water under both positive and negative pressure. Bear in mind that resistance to positive thrust is always greater than resistance to counter thrust.
- High binding power. The use of special additives makes **Hydro Osmo K** highly resistant to interfacial tension caused by vapour pressure.
- High water vapour permeability. The vapour, that is generated inside the structure due to variations in the temperature, is released through the coating, thus minimising surface tension;
- Excellent resistance to freeze-thaw cycles. The binding values obtained after exposure to extreme conditions of frost, heat and chemical aggression are proof of its long-lasting reliability.



- Excellent abrasion resistance, high-performance hydraulic binders, selected inert materials in a continuous grading curve result in good superficial mechanical strength. An important requirement for guaranteeing long-term durability in the case of the transportation of solids which often occurs in different hydraulic structures;
- Good workability. The use of special additives and fillers with a constant particle size, maximum < 500 microns, makes **Hydro Osmo K** extremely smooth, easy to work and apply, both by spraying and using a notched trowel (3mm notches), roller or brush, effectively meeting all the application requirements of a construction site.

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## APPLICATION METHOD

### Preparation of the substrate

Mechanically remove any flaking or easily detached parts. Thoroughly clean the application area so that it is free of dust and residue from surface treatments, such as detergents, oily substances, mineral or organic oil, wax, traces of gypsum or salt. If any of the structures have deteriorated, all the degraded concrete must be removed and repaired with the products from the **licata.repair range**. The substrate must be slightly roughened by sandblasting, hydro sandblasting or power washing with a water pressure over 500 atm. Any water ingress must be blocked by using **Hydro Block 45S** instant grout. The cracks should be closed or sealed using **Epoxy 230 A+B**. The joints must be waterproofed using **LicaBand RL12**, **LicaBand BTS 100** or **Flex Tape 200** elastic bands. The substrate must be wet until saturated and in SSD conditions (Saturated-surface-dry). We recommend using pressurised water at about 80 atm to do this. This will ensure that any residual traces of dust or grit from previous sandblasting are eliminated and will stop the surface of the old, dried-out concrete from absorbing water from the mixing water which could affect adhesion.

### Preparing the mixture

For the grey version, you will need 6-6.5 litres of clean water (UNI EN 1008) for every 25-kg bag (i.e. 24-26% density). For the white version, you will need 5.75-6.25 litres of clean water (UNI EN 1008) for every 25-kg bag (i.e. 23-25% density).

Pour the product into a clean container with  $\frac{3}{4}$  of the mixing water. Mix for about 3 minutes with a low-speed mixer, gradually adding the remaining water until you obtain a smooth, lump-free mixture or use plastering machines (continuous cycle machines must not be used). Do not divide the packages up into partial mixtures.

If the product is stored in open, partially used sacks, it may not meet the technical characteristics outlined in this document.

### Application

Apply **Hydro Osmo K**, with a brush or float, within 30-40 minutes of mixing. After about 4-6 hours (depending on the weather conditions), apply a second coat. The thickness of each layer of **Hydro Osmo K** should not exceed 1.5 mm; the final thickness should be between 3 and 4 mm. Application by spraying can be done easily with plastering machines (continuous cycle machines must not be used). The mixing water must always be dosed correctly, even using simple graduated buckets. In extreme weather conditions (strong wind, full sun, etc.), it is advisable to take precautions to prevent the product from drying too quickly. It is also possible to perform wet curing by spraying on water. Inserting mesh when protecting concrete and waterproofing foundation walls is recommended, but not strictly necessary. For challenging conditions, such as highly uneven surfaces with micro cracks, areas subject to wear, etc., it is highly recommended to insert **Lica Armor 1000**, a micro-perforated polypropylene fabric, as a reinforcement, into the first layer of fresh **Hydro Osmo K**. You can apply a second coat after 4-6 hours.

- When applied at low temperature, bear in mind that the development of mechanical strength will be slower. It is advisable to saturate the substrate with hot water in the hottest part of the day and use mixing water at a temperature of 20 °C.

- When applied at high temperatures, cool mixing water should be used, the bags of **Hydro Osmo K** should be stored out of the sun and the product applied in the coolest part of the day.

- Make sure that the ambient temperature, that of the substrate and product during application, is between +5 °C and +35 °C. If the temperature is lower or higher, do not apply.

## PRODUCT INFORMATION

Appearance	Gray and white powder
Particle size	<0.5 mm
Powder consumption	1.4 kg/m <sup>2</sup> every 1 mm of thickness
Mixing water	grey 24% - 26% white 23% - 25% of weight of powder
Workability time at 20 °C	30 - 40 minutes
Application thickness per coat	≤1.5 mm
Application temperature	From +5 °C to +35 °C
Storage	9 months (grey) and 12 months (white) in a dry, protected place in unopened packages at temperatures between +5 °C and +35 °C
Packaging	25 kg bag
Dry mortar density	1700-1800 kg/m <sup>3</sup>
pH of mixture	approx. 11

## PERFORMANCE

Characteristic	Test method	Performance
Permeability to CO <sub>2</sub> (m)	EN 1062-6	>4
Water vapour permeability (class)	EN ISO 7783-1 EN ISO 7783-2	V2
Capillary water absorption and liquid water permeability (Class)	EN 1062-3	W1
Direct tensile adhesion strength (MPa)	EN 1542	>0.8 (A/B)

## WARNINGS

- Product for professional use.
- Do not add water or more powder to the product once mixed.
- Alkaline material: protect eyes and skin during application.
- After use, wash tools with water while the mixture is still fresh.
- The ambient temperature and humidity rate affect the workability, setting and drying times.
- Monitor the product's curing period for at least 24 hours after applying; protect the fresh mortar from rapid drying, direct sunlight, strong wind and heavy rain.

## SAFETY

Please consult the safety data sheet for information about product disposal, storage and usage.

## NOTES

This data sheet replaces and voids all previous versions.

The indications and specifications given in this document are based on our current technical and scientific knowledge. They should, however, be considered as purely indicative because we have no control over the conditions in which the product will be used. The purchaser must, therefore, check that the product is suitable for his specific requirements. Our sales and technical network guarantees rapid consultancy services and is at your disposal for any clarifications and

questions you may have about the use and application of **Licata SpA** products.

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