Metric Osmotic

Waterproofing, osmotic, cement-based protective product for concrete.

Metric Osmotic is a single-component, thixotropic covering, resistant to positive and negative hydraulic pressure.



1. White and grey
2. Thixotropic
3. certified EN 1504-2 (C)
4. Certified as suitable for the containment of drinking water
5. Excellent levels of resistance to abrasion
6. High resistance to severe chemical attacks

kerakoll

Areas of application

→ Use
Waterproofing of elements in reinforced concrete, prestressed reinforced concrete and structural plasters/renders:
- foundations, lift shafts, underground premises and car parks;
- exterior foundation walls, also with negative hydrostatic thrust;
- canals, manholes, basins, tanks, siphons and reservoirs for water, including drinking water;
- bridges, viaducts, tunnels and dams.

Do not use on non-structural substrates, flexible substrates, walls in gypsum, plasterboard or ready-to-use gypsum-based plasters/renders.

Instructions for use

→ Preparation of substrates
The substrate must be perfectly cured, free from hygrometric shrinkage, consistent, free of loose or easily removable debris, and free from parting compounds, oil, grease or paint.
The most suitable substrate preparing methods are sandblasting, shot peening or washing with water under pressure.
When working on weakened parts, when parts of the substrate are missing or in the case of honeycombs, the substrate must be properly prepared with a mineral mortar from the Geolite o Metric range.
When waterproofing exterior foundation walls and basement dwellings, cut spacers at a depth of approximately 3 cm and fill the holes with a mineral mortar from the Geolite o Metric range.
In the presence of corners, and after making a dove-tail channel in the wall-slab or wall-wall contact line, make rigid connection shells with mineral mortar from the Geolite or Metric range,.
Prior to the application, saturate with water until the substrate is saturated yet with no excess water on the surface.

→ Preparation
Prepare Metric Osmotic by mixing the powder with the amount of water indicated on the packaging (we advise using the whole bag). The mixture can be prepared in:
- a suitable mixing pump;
- a mortar mixer or drill-type mixing device with a low-rev agitator.

Leave the mixture to rest for approximately 5 minutes to allow for complete hydration and mix again for approximately 20 seconds before use.

→ Expansion joints: when waterproofing monolithic structures in the presence of expansion joints, it is necessary to connect the opposite surfaces with a suitable technical joint anchored to the substrate and bonded on the overlaying sections before laying Metric Osmotic. If the joint is subject to positive pressure, the underlying seat which is free from movement must be sealed with Joint and Tetra Seal. If the joint operates with counterthrust, the negative pressure exercised on the central, elastic part of the joint will be counteracted by means of a sheet-metal profile anchored to the concrete with anchoring pins applied to deep slots to allow for the effect of expansion.

→ Application
Metric Osmotic must be applied with a rigid brush or with a spreader, depending on the type of intervention required (simple waterproofing or simultaneous finishing of the substrate), or with a suitable pump for spraying low-thickness coverings. Make adjustments to the mixing water in order to obtain a consistency suitable for the required application. Once the product has hardened, apply a second coat (normally 2-3 hours for brush application, 4-6 hours for spreader application, depending on weather conditions and the degree of absorbency of the substrate), do not apply the second coat after a period of 24 hours. Apply the second coat in a crosswise direction from the previous coat. Apply with great care to ensure complete coverage of surfaces and proper connection to the walls and horizontal surfaces by means of connection shells.

→ Cleaning
Residual traces of Metric Osmotic can be removed from tools using water before the product hardens.

Special notes

- → Application of plasters/renders on walls waterproofed with Metric Osmotic: to facilitate adequate bonding of the plaster/render on the waterproofing layer, apply a wide rough coat with Metric, Geolite, Geocalce G or F Antisismico or Biocalce Rinzaffo mineral mortar once the product has hardened and in any case within a period of 24 hours following application of the last coat.
- → Basement dwellings: after waterproofing and applying a rough coat, apply Benesserebio or Biocalce Zoccolatura thermally dehumidifying bio-render to guarantee a healthy living environment.
- → Reservoirs for the containment of drinking water: once the Metric Osmotic covering has cured, wash it repeatedly using warm water before putting the tank into operation, in order to lower the pH of the cement-based covering.

Certificates and marks

CE EN 1504-2(C) · MC METHOD 2.2 EN 1504-2 · RC METHOD 6.1 EN 1504-2 · IR METHOD 8.2 EN 1504-2 · EPD-IES-0011325 environdec.com · GEV-EMICODE EC 1 PLUS very low emission · Aticelca® 11137-0006

When properly emptied, the packaging is recyclable as paper (up to 80 per cent) according to the ATICELCA® 501 method.

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Abstract

Supply and laying of a single-component, thixotropic, osmotic cement-based protective product, such as Metric Osmotic by Kerakoll, for waterproofing of elements in reinforced concrete, prestressed reinforced concrete and structural plasters/renders, in the presence of water under positive or negative thrust. Suitable for the containment of drinking water, CE-marked and compliant with the performance requirements of Standard EN 1504-2 (C); according to Principles as defined by Standard EN 1504-9.

Technical Data compliant with Kerakoll Quality Standard		
Appearance	white or grey powder	
Apparent volumetric mass	≈ 1280 kg/m³	UEAtc
Mineralogical nature of inert material	silicate - carbonate	
Grading	0 – 0,4 mm	UNI 10111
Shelf life	≈ 12 months from production in the original sealed packaging, protect from humidity	
Pack	25 kg bags	
Mixing water:		
- for spreader application	≈ 5 l / 1 x 25 kg bag	
- for brush application	≈ 6 l / 1 25 kg bag	
Mixture spread	≈ 85%	UNI 7044
Density of the mixture	≈ 1730 kg/m³	UNI 7121
pH of the mixture	≥ 12	
Pot life	≥ 1 hr	
Temperature range for application	from +5 °C to +35 °C	
Minimum thickness	2 mm	
Maximum thickness per layer	3 mm	
Maximum thickness	6 mm	
Waiting time:		
- before filling	≈ 14 days	
- for application of a rough coat	max 24 hrs	
Coverage:		
- for spreader application	≈ 1.5 kg/m² per mm of thickness	
- for brush application	≈ 1.4 kg/m² per mm of thickness	

Values taken at +21 °C, 60% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

Performance			
VOC Indoor Air Quality (IAQ) - Volatile organic compound emissions			
Conformity	EC 1 plus GEV-Emicode		GEV certified 17756/11.01.02
HIGH-TECH			
Performance characteristic	**Test Method**	**Requirements of standard**	**Performance**
Resistance to the pressure of water:			
- thickness 2 mm	DIN 1048	None	> 3 bar
- thickness 6 mm	DIN 1048	None	> 7 bar
Resistance to reverse hydrostatic pressure	UNI 8298-8	None	≤ 3 bar
Containment of water intended for human consumption	EN 14944-1	Compliant	Compliant
Collection, treatment, supply and distribution of water intended for human consumption	D.M. 174-06/04/2004	Compliant	Compliant
	Test Method	**Requirements of standard EN 1504-2 (C)**	**Performance**
Compressive strength	EN 12190	Reference class	Class I: ≥ 35 N/mm²
Resistance to abrasion	EN ISO 5470-1	loss of weight < 3000 mg	value exceeded
Permeability to water vapour	EN ISO 7783-2	Reference class	class I: SD < 5 m
Capillary absorption and water permeability	EN 1062-3	$w < 0,1\ kg \cdot m^{-2} \cdot h^{-0,5}$	$w < 0,1\ kg \cdot m^{-2} \cdot h^{-0,5}$
Bond strength by pull off	EN 1542	≥ 2 N/mm²	> 2 N/mm²
Reaction to fire	EN 13501-1	Euroclass	A1

Performance		
Resistance to severe chemical attacks - Performance requirements according to EN 1504-2		
Group 2 according to EN 13529	**Testing liquid**	**Performance ***
1. Petrol	47,5% toluene by volume	Class II
	30,4% isooctane by volume	Class II
	17,1% n-heptane by volume	Class II
	3% methanol by volume	Class II
	2% tertiary butanol by volume	Class II
2. Aviation fuel	1 - 50% isooctane by volume	Class II
	1 - 50% toluene by volume	Class II
	2 - 100LL Aviation fuel, Nato code F-18	Class II
	3 - A-1 Turbo fuel, Nato code F-34/F-35	Class II
3. Unused heating oil, diesel oil and oils for engine and gear	80% by volume of n-paraffin (C12-C18)	Class II
	20% methylnaphthalene by volume	Class II
4. All hydrocarbons including groups 2 and 3 except 4a) and 4b) and used oils for engine and gear	60% toluene by volume	Class II
	30% xylene by volume	Class II
	10% methylnaphthalene by volume	Class II
5. Mono- and poly-alcohols (up to 48% methanol by volume), glycol ethers	48% methanol by volume	Class II
	48% isopropanol by volume	Class II
	4% water by volume	
6. halogenated hydrocarbons	Trichloroethylene	Class II
11. Inorganic bases up to 20% and their salts with alkaline hydrolysis in aqueous solution (pH > 8) except ammonium solutions and oxidising solutions of salts (e.g. hypochlorite)	Sodium hydroxide (20%)	Class II
12. Solution of inorganic non-oxidising salts with pH = 6-8	Aqueous solution of Sodium Chloride (20%)	Class II
15. Cyclic and acyclic ethers	Tetrahydrofuran (THF)	Class II

* Class I: after 3 days of contact with no pressure - Class II: after 28 days of contact with no pressure - Class III: after 28 days of contact with pressure

Warning

→ abide by any standards and national regulations
→ store the product away from any sources of humidity and out of direct sunlight
→ use at temperatures between +5 °C and +35 °C
→ do not add binders or additives to the mixture
→ do not apply to dirty, loose and flaking surfaces
→ do not apply on gypsum, metal or wood
→ following application, protect from direct sunlight and wind
→ allow the product to cure during the first 24 hours
→ joints present in the surfaces must be waterproofed with elastic products so as to ensure a perfect seal
→ if necessary, ask for the safety data sheet
→ for any other issues, please contact the Kerakoll Worldwide Global Service - info@kerakoll.ae

This information was last updated in April 2026; please note that additions and/or amendments may be made over time by KERAKOLL SpA; for the latest version, see www.kerakoll.com. KERAKOLL SpA shall therefore be liable for the validity, accuracy and updating of information provided only when taken directly from its institutional website. The technical data sheet given here is based on our technical and practical knowledge. As it is not possible for us to directly check the conditions of your building site and the execution of the work, this information represents general indications that do not bind Kerakoll in any way. Therefore, it is advisable to perform a preliminary test to verify the suitability of the product for your purposes.

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