

MasterSeal 545

Two-component, polymer modified cementitious waterproofing, class A4, fiber-reinforced crack bridging, 2 mm in a single coat without reinforcing mesh, for concrete and screeds.

MATERIAL DESCRIPTION

MasterSeal 545 is a two-components elastic waterproofing, cementitious modified with polymers, grey or white color, specific for reinforced concrete structures and cementitious substrates.

MasterSeal 545 is reinforced with natural non-toxic inorganic microfibers with a high shape ratio (Length / Diameter), capable of forming a homogeneously diffused three-dimensional micro reinforcement which contributes to giving the waterproofing membrane a high crack bridging capacity and at the same time resistance to traction.

MasterSeal 545 is classified as a protective waterproofing for reinforced concrete structures satisfying the principles of UNI EN 1504-2:

- 1 (PI), suitable for protection against the entry of aggressive agents (Method 1.3);
- 2 (MC), suitable for humidity control (Method 2.2);
- 5 (PR), suitable for increasing physical resistance / surface improvement (Method 5.1);
- 6 (RC) suitable for increasing chemical resistance (Method 6.1);
- 8 (IR), suitable for increasing resistivity (Method 8.2).

MasterSeal 545 is also classified as a UNI EN 14891 waterproofing product (to be used under ceramic tiles glued with adhesives), CM-01-P:

- CM, cementitious waterproofing;
- 01, crack bridging ability improved at low temperatures (-5 ° C);
- P, resistant to water containing chlorides.

FIELDS OF APPLICATION

MasterSeal 545 is suitable for the protection and waterproofing of concrete structures and cementitious substrates such as:

- canals, dams, tanks for the containment of drinking water;
- fish farming tanks and tanks containing white water;
- structural elements in concrete in contact with aggressive agents such as sea water and de-icing salts;
- cement based screeds, before being covered with ceramic coatings, of bathrooms, showers, swimming pools, balconies and terraces.

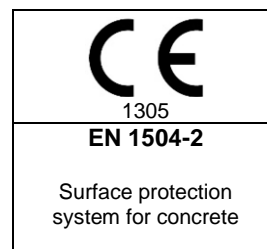
In the case of aggressive waters, always contact the Master Builders Solutions Technical Service to validate the application.

FEATURES AND BENEFITS

The features peculiar to MasterSeal 545 are:

- crack bridging class A4 (1,25 – 2,5 mm) according to EN 1504/2;
- impermeable both for positive and negative pressure;
- UV lights resistant;
- anti-carbonation coating;
- compliance with the principles defined in EN 1504/2 (“Surface protection systems for concrete”) and relative specifications;
- drinking water certified according to the Italian Ministerial Decree No. 174 of 6 April 2004 (Italian transposition of the European Directive 98/83/CE, Regulations concerning materials and objects that may be used in fixed systems for the collection, treatment, supply and distribution of water intended for human consumption).

In compliance with the European Regulation (EU No 305/2011 and EU No. 574/2014) the product is provided with the CE marking according to UNI EN 1504-2 and 14891 and the relative DoP (Declaration of Performance).



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THEORETICAL COVERAGE

3,4 kg/m² for 2 mm thickness.

PACKAGING

Product	Packaging	Kg
Component A	Bag	25
Component B	Plastic pail	10
Kit (A+B)	1 Bag + 1 Plastic pail	35

STORAGE

Store the product in a sheltered, dry place at a temperature anywhere between +5°C and +30 °C.

Technical Information	
Mixing ratio	A / B= 25 / 10
Dough density, UNI EN 1015-6	c.a 1,7 kg/l
Application temperature	+ 5° C - + 40° C
Workability time	60 minutes a 20° C,
Recoating time at 20 ° C	12-24 ore
Consumption	3,4 kg/m ² per 2 mm.
Packs	<ul style="list-style-type: none">• A: bag da 25 kg• B: tank da 10 kg

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Essential characteristic in accordance to UNI EN 1504/2 (2 mm)			Limits and class	Performances
Adhesion	In the absence of thermal cycles	UNI EN 1542 on substrate MC (0,40) EN 1766	> 0.8 MPa	> 1 MPa
	After 50 freeze / thaw cycles with UNI EN 13687/1 de-icing salts		> 0.8 MPa	> 1 MPa
Crack bridging ability at 23°C, UNI EN 1062/7		Static	23°C	A ₄ (1.25-2.5 mm)
			-20°C	A ₃ (0,5-1,25 mm)
		Dyn	23°C	Class B ₂
			-20°C	Classes B ₁ , B ₂ B _{3.1} B _{3.2} B _{4.1} B _{4.2} Class B ₁ , B _{3.1} con FX Mesh
Permeability	To Water vapor	UNI EN ISO 7783/1. Equivalent air thickness S _d , S _d = μ s, μ = coefficient Vapor diff., S = thickness	Class I: S _d < 5 m (Permeable), Class II: S _d ≥ 5 e ≤ 50 m, Class III: S _d > 50 m (Non Perm.)	Class I
	to CO ₂	UNI EN 1062/6. Equivalent thickness of air S _d , S _d = μ · s, μ = coeff. Diff. CO ₂	S _d > 50 m	S _d > 50 m
	To water	For capillary absorption EN 1062/3	< 0,1 kg·m ⁻² ·h ^{-0,5}	0,01 kg·m ⁻² ·h ^{-0,5}
Mechanical resistance	Impact	UNI EN ISO 6272	Class I: 4 N·m, Class II: 10 N·m Class III: 20 N·m	Class III
	Abrasion	UNI EN ISO 5470/1 (1000 g grindstone H22/1000 cycles)	Weight loss < 3000 mg	< 3000 mg
UV lights resistance	Aging under artificial atmospheric agents (2000 hours of UV rays and condensation), UNI EN 1062/11		No swelling, cracks or flaking	No swelling, cracks or flaking
Chemical resistance	Severe chemical attack UNI EN 13529 - Test liquid n ° 11 (Sodium Hydroxide 20%). Aggressive assimilable: inorganic bases and their salts with alkaline hydrolysis in aqueous solution (pH> 8) - Test liquid n ° 12 (Sodium chloride 20%). Assilable aggressive: solutions of inorganic non-oxidizing salts with pH = 6-8		Class II: after 28 days of contact, Shore reduction < 50%	Class II (Shore 0%) Class II (Shore 0%)
Essential characteristic in accordance to UNI EN 14891 (2 mm)			Limits and class	Performances
Adhesion of glues for ceramic coatings UNI EN 12004 on MasterSeal 545	Initial (adhesive application after 24h)	UNI EN 14891 A.6.2	≥ 0,5 MPa	≥ 0,5 MPa
	After immersion in water	UNI EN 14891 A.6.3	≥ 0,5 MPa	≥ 0,5 MPa
	After thermal aging	UNI EN 14891 A.6.5	≥ 0,5 MPa	≥ 0,5 MPa
	After freeze and thaw cycles	UNI EN 14891 A.6.6	≥ 0,5 MPa	≥ 0,5 MPa
	After contact with water and lime	UNI EN 14891 A.6.9	≥ 0,5 MPa	≥ 0,5 MPa
Impermeability to water UNI EN 14891 A.7			Zero penetration Weight gain <20 g	Zero penetration Weight gain 0 g
Crack bridging ability, UNI EN 14891 A.8		a 23°C	≥ 0,75 mm	> 1.3 mm
		a -5°C	≥ 0,75 mm	> 1,3 mm
Essential characteristic in accordance to hydraulic pressure			Limits and class	Performances
Positive hydraulic pressure resistance, UNI EN 12390/8 (5 bar)			Guidelines Cons. Sup. LL.PP Average penetration <20 mm Penetration. maximum <50 mm	< 20 mm < 50 mm
Resistance to negative hydraulic pressure, UNI 8298/8			0 to 2,5 bar	2,5 bar

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APPLICATION SHEET

STRUCTURALLY SOUND CONCRETE

The preparation of all surfaces must include the removal of all inconsistent surface parts, greases, oils, traces of release agents and must be carried out by pressure washing, hydro-sandblasting or sandblasting.

DAMAGED CONCRETE

Provide for the removal of the degraded concrete layer or contaminated by oils, greases or other substances and then for the quick-drying restoration with MasterSeal P 385 D mixed with water only. If a quick-drying restoration is not required, repair the deteriorated concrete using mortars from the MasterEmaco range.

WATER LEAKAGE

Water infiltration must be stopped using the fast setting mortar MasterSeal 590 or MasterSeal P 385 comp D mixed with water only, before applying MasterSeal 545.

COVINGS

The covings will be prepared using MasterSeal 590 or MasterSeal P 385 D mixed with water only. For details, always refer to the relevant technical sheets. In the case that is not feasible to realize the coving (for example in swimming pools lined with tiles that require an angle of 90°) reinforce the corners using the tape MasterSeal 944 or MasterSeal 924.

JOINTS

To ensure proper waterproofing of the structure great care must be taken over levelling out geometrical and constructional unevenness by suitably using MasterSeal NP 474 sealant, elastic tapes MasterSeal 944 or MasterSeal 924, MasterSeal 902 bentonite hydro-swelling water stop or MasterSeal 910 rubber hydro-swelling water stops.

POSSIBLE LEVELLING

In the waterproofing of structures intended for the continuous containment of liquids, therefore subjected to positive hydrostatic pressure, the substrate must be free of any discrepancies that could affect its effectiveness.

Any macroscopic pitting or other solutions of non-continuity of the substrate must be corrected by pre-skimming with mortars from the MasterEmaco range or,

promptly, during the application phase of MasterSeal 545, with the product itself.

For interventions of only protection and waterproofing of structures not subject to containment of liquids, such as, for example, piers and beams of road or railway viaducts, underpasses, walls against the ground, pillars), preventive smoothing is not necessary. ceramic flooring.

CLEANING AND SATURATION OF THE CONCRETE

Once the substrate has been prepared, thoroughly wash the whole surface to be treated to saturate it and also to remove any dust left from substrate preparation.

APPLICATION TEMPERATURE

Between +5 °C and +40°C.

PREPARING THE MIX

Pour approx. 75% of the liquid component B into a bucket. Slowly add the powdered component A, constantly mixing the product with a low-speed drill (400-600 rpm) with whisk attachment until a smooth, lump-free mix is obtained.

Continuing to mix, add the remaining part of the liquid component B, as specified in the table, to the mix.

Application method	Component B per bag of Component A
Spatula	9 – 9,5 kg
Brush	9 – 9,5 kg
Spray	9,5 – 10 kg

Quantity of component B (latex) for every complete pack (A+B), they may vary slightly according to the environmental conditions.

Mix thoroughly for a maximum of 3 minutes until a smooth, lump-free fluid mix has been obtained.

Let the mix to rest for approx. 5 minutes so that the polymer can completely disperse. Then mix again for a maximum of 2 minutes. Maintain the same mixing ratio for the various mixes used in the one application so that the colour of the coating remains the same.

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APPLICATION

The application can be carried out with a hard bristle brush or spatula.

It is always recommended in two coats even if it can also be applied in a single coat.

Spray application by means of a Turbosol T7 screw pump or equivalent is also possible. For the set up of the pump, depending on the type of construction site, seasonality, any state of wear of the pump itself, always refer to the instructions provided by the manufacturer of the machines. Before starting the construction site, always provide this setting in a test field, also requesting the assistance of the manufacturer / hirer of the spraying machinery.

If the brush tends to drag the product during the application of the first layer, do not add latex but further moisten the support.

Before applying the second layer, moisten the substrate, especially in the case of particularly hot days. The second layer must be "crossed" with the first layer to ensure maximum impermeability to the intervention. However, it is recommended to apply the second layer only when the previous one is dry enough to resist rubbing.

CURING

Whenever the product is not yet set it must be protected against the rain.

After 7 days MasterSeal 545 is fully cured and it can be used for waterproofing purposes.

CLEANING

If MasterSeal 545 is used to waterproof drinking water tanks or fish tanks, it is recommended, after application and curing, to provide at least two pressurized water washes spaced a few hours apart in order to remove any traces of construction site processing residues.

SANITIZATION OF THE TANKS

Use a 1% sodium hypochlorite (bleach) solution in water. Leave to act for at least 30 minutes and a maximum of 60 minutes, then wash thoroughly with tap water. In the case of heavily soiled surfaces, this process can be repeated a second time or higher concentrations of sodium hypochlorite (maximum 5%) can be used.

NOTES ON THE HARDNESS OF THE CONTACT WATER

To evaluate the compatibility of the waterproofing coating with the hardness of the contact water, refer to the following table:

Water hardness in French degrees ° f	Type of water	MasterSeal 545
Up to 4 °f	Very sweet	Unsuitable
From 4 °f up to 8 °f	Desserts	Eligible
From 8 °f up to 12 °f	Medium hard	Eligible
From 12 °f up to 18 °f	Discret. hard	Eligible
From 18 °f up to 30 °f	Hard	Eligible
> 30 °f	Very hard	Eligible

SAFETY INSTRUCTION

For information on the correct and safe use, transport, storage and disposal of the product, consult the most recent Safety Data Sheet.

OTHER SERVICES

For price analysis, specifications, supplementary brochures, references, reports and technical assistance, visit the website www.master-builders-solutions.com/it-it or contact infomac@mbcc-group.com.

Scan the QR code to visit the product page and download the latest version of this datasheet.



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Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

Master Builders Solutions Italia Spa

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For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.

Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.

This version supersedes all the previous ones.