

MasterSeal 581

Polymer modified cementitious waterproofing resistant to negative and positive hydraulic pressure, shocks and abrasion, 2 mm thick, for concrete and masonry.

MATERIAL DESCRIPTION

MasterSeal 581 is a high-performance cementitious waterproofing product specific for creating continuous waterproof coatings on structures and elements in concrete and masonry.

Applied with a spatula, hard bristle brush or spray, it creates a membrane resistant to positive and negative hydrostatic pressure, particularly resistant to abrasion and impact. Available in grey and pure white colors.

MasterSeal 581 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).

FIELDS OF APPLICATION

MasterSeal 581 is suitable for the protection and waterproofing of concrete structures or cement-based supports, such as:

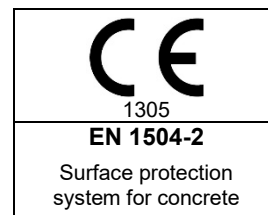
- canals, dams, tanks for the containment of drinking water or white water in general;
- foundations, lift pits, basements and underground car parks subject to hydraulic counter-thrust;
- retaining walls.

FEATURES AND BENEFITS

MasterSeal 581 also has the additional peculiar characteristics:

- quick re-commissioning of the structures (after 24 hours);
- high surface resistance which makes the product suitable even where resistance to stress and abrasion is required
- impermeable to water in positive and negative thrust;
- It is UV resistant and can therefore be left exposed.

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 the relative DoP (Declaration of Performance).



COVERAGE

To get 2 mm thickness:

- MasterSeal 581: 3.4 kg/m²
 - MasterSeal 600 as optional component B: 0.20 liters / m²
- Minimum thickness 2 mm.

PACKAGING

- 25 kg bag grey – 20 kg bag white
- MasterSeal 600 as optional component B: 5 and 20 liter tank.

STORAGE

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

Technical Information	
Mixing ratio	5 liters (20%) or 3.75 liters and 1.25 liters MasterSeal 600
Dough density UNI EN 1015-6	c.a 2.05 kg/l
Application temperature	+ 5°C - + 40°C
Workability time	45 minutes a 20°C
Recoating time at 20°C	12-24 ore
Consumption	3,4 kg/m ² per 2 mm
Packs	25 kg bag MasterSeal 600 as component B (optional) in 5 and 20 liters cans

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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	> 3 MPa
	After 50 freeze / thaw cycles with UNI EN 13687/1 de-icing salts		> 0.8 MPa	> 3 MPa
Permeability	To Water vapour	UNI EN ISO 7783/1. Equivalent air thickness Sd, $S_d = \mu s$, $\mu =$ coefficient Vapor diff., S = thickness	Class I: $S_d < 5$ m (Permeable) Class II: $S_d \geq 5$ e ≤ 50 m Class III: $S_d > 50$ m (Non Perm.)	$S_d < 0,2$ m Class I
	To water	For capillary absorption EN 1062/3	$< 0,1 \text{ kg}\cdot\text{m}^{-2}\cdot\text{h}^{-0,5}$	$0,05 \text{ kg}\cdot\text{m}^{-2}\cdot\text{h}^{-0,5}$
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	< 1000 mg
	Compression	UNI EN 12190		24 ore > 30 MPa 28 gg > 50 MPa
	Thermal expansion	UNI EN 1770		$2,13 \cdot 10^{-5} \text{ K}^{-1}$
UV 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%). Assimilable aggressive: solutions of inorganic non-oxidizing salts with pH = 6-8		Class II: after 28 days of contact Shore reduction < 50%	Classe II (rid. Shore D 0%) Classe II (rid. Shore D 0%) Classe II (rid. Shore D 0%)
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 D mixed with water only, before applying MasterSeal 581.

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.

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

MasterSeal 581 must be mixed with a whisk drill at low rotation speed (400-600 rpm) or by hand using a trowel or spatula (for portions of bags).

To obtain higher performance especially in terms of workability, adhesion (especially in cases of negative thrust) and curing in the event of wind and high temperature, it is recommended to use a 3/1 ratio of water / MasterSeal 600.

A 25 kg package of MasterSeal 581 therefore requires 5 liters of water, or 3.75 liters of water and 1.25 liters of MasterSeal 600. MasterSeal 600 should not be used if the coating is expected to come into contact with hydrocarbons (in case of contact with hydrocarbon, however, contact our technical service).

When mixing by hand, gradually add the MasterSeal 600 liquid to MasterSeal 581, mixing with a trowel or spatula. Let the dough rest for a few minutes, then re-mix and, if necessary, add more liquid until the required consistency is obtained. In the mix with a whisk drill, gradually pour MasterSeal 581 into the liquid and mix using a whisk drill. The consistency of MasterSeal suitable for application is obtained when the brush dipped in the mortar and slightly inclined, slowly descends. If the mixture is too dry, MasterSeal is difficult to apply, while if it is too fluid it tends to run. Under normal environmental conditions, the mix must be used within 45 minutes of the end of mixing. Do not restore the product by adding water.

APPLICATION

In the case of new works, MasterSeal 581 can also be used immediately after the casting has been removed. MasterSeal 581 requires laying in two successive layers after hardening.

The first layer is preferably applied with a brush or brush, in the average amount of 1.7 kg/m².

The application by hand allows a better penetration of the mortar into the porosity of the substrate. If the brush tends to drag the product during application, do not add latex but further moisten the support.

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The second layer must be applied when the first has reached sufficient hardening, preferably the next day and in any case not earlier than 8 hours. After wetting the surface, apply MasterSeal 581 in the average quantity of 1.7 kg / m².

The second layer can be installed by hand or by spray using a Turbosol T7 screw pump or equivalent. 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.

CURING

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

After 7 days MasterSeal 581 is fully cured and it can be used for waterproofing purposes.

CLEANING

If MasterSeal 581 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	Unsuitable
From 8°f up to 12°f	Medium hard	Unsuitable
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

Via Vicinale delle Corti, 21 – 31100 Treviso – Italia

T +39 0422 429200 F +39 0422 421802

www.master-builders-solutions.com/it-it

e-mail: infomac@mbcc-group.com

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.