

# MasterSeal 528

Single component micro-fibers reinforced crack bridging class A3 cementitious waterproofing membrane for applications under ceramic tiles EN 14891 and protection of concrete EN 1504/2.

## DEFINITION OF THE MATERIAL

MasterSeal 528 is a light grey polymer modified single component cementitious crack bridging membrane designed for waterproofing under ceramic tiles according to EN 14891 and for the protection of concrete according to EN 1504/2.



MasterSeal 528 is reinforced with a unique inorganic natural non-toxic high aspect ratio microfibers (length / diameter), able to create a micro three-dimensional homogeneously diffused reinforcement to improve the crack bridging ability and tensile strength of the waterproofing membrane.

## MAIN FIELDS OF APPLICATION

MasterSeal 528 is suitable for the waterproofing applications:

- under ceramic tiles foreseen by EN 14891 (Liquid applied water impermeable products for use beneath ceramic tiling bonded with adhesives - Requirements, test methods, evaluation of conformity, classification and designation) like for instance balconies, terraces, sidewalks, bathrooms, kitchens, reservoirs, fountains and swimming pools;
- concrete structures according to EN 1504/2 (Protection of concrete) like swimming pools, clean water reservoirs, potable water tanks, cockpits and so on.

## FEATURES

The features peculiar to MasterSeal 528 are:

- single component 15 kg bag, compared to the two-component products, allows an easier management of the warehouse and the yard,

- reduces storage space and disposal costs of the plastics;
- EN 14891 certified and therefore compatible with all adhesives for ceramic tiles type C (Cement) according to EN 12004 (which classifies the adhesives for ceramics with the letters "normal adherence (1) or improved (2), fast setting (F), slip resistance (T), extended open time (E), deformable (S1), highly deformable (S2)";
- classified EN 14891 as **CM-O1-P**:
  - CM = cementitious liquid-applied water impermeable products;
  - O1 = with improved crack bridging ability at low temperature (-5°C)
  - P = resistant to contact with chlorinated water (i.e. for use in swimming pools);
- 2 mm thickness in a single coat;
- it can be covered with ceramic tiles after just 48 hours;
- crack bridging class A3 (0.5 to 1.25 mm) according to EN 1504/2;
- impermeable to water pressure both positive and negative;
- UV lights resistant and therefore can be exposed for outdoors applications;
- 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);
- fulfils the requirements defined in EN 1504/2 ("Protection systems for concrete surfaces"):
  - Principle 1 (PI): Protection against ingress (Method 1.3);
  - Principle 2 (MC): Moisture control (Method 2.3);
  - Principle 5 (PR) : Physical Resistance/Surface Improvement (Method 5,1);
  - Principle 8 (IR): Increasing Resistivity by limiting moisture content (Method 8.3) ;
- reduces CO<sub>2</sub> emissions compared to the two-component waterproofing, in fact without the B component in plastic pail, it contributes to reducing emissions of greenhouse gases in the atmosphere.

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## THEORETICAL COVERAGE

2,2 kg/m<sup>2</sup> for 2 mm thickness.

## PACK

15 kg bags.

### PERFORMANCES EN 14891 “ Liquid applied water impermeable products for use beneath ceramic tiling bonded with adhesives”

Test methods		Requirements	Performance
Adhesion of the EN 12004 tiles adhesives on MasterSeal 528	Initial EN 14891 A.6.2	≥ 0,5 MPa	> 1 MPa
	After immersion into water EN 14891 A.6.3	≥ 0,5 MPa	> 1 MPa
	After thermal ageing EN 14891 A.6.5	≥ 0,5 MPa	> 1 MPa
	After freeze-thaw cycles EN 14891 A.6.6	≥ 0,5 MPa	> 1 MPa
	After contact with high pH water EN 14891 A.6.9	≥ 0,5 MPa	> 1 MPa
	After contact with chlorides waters EN 14891 A.6.8	≥ 0,5 MPa	> 1 MPa
Permeability to water EN 14891 A.7		No penetration Weight increase < 20 g	No penetration Weight increase zero
Resistance to cracks opening	Crack bridging ability EN 14891 A.8	+ 23°C	≥ 0,75 mm
		- 5°C	≥ 0,75 mm

### PERFORMANCES EN 1504/2 “Protection of concrete”

Test methods		Performance (2 mm thickness)
Adhesion to the concrete	EN 1542 on MC substrate (0.40) EN 1766	> 1.4 MPa
	EN 1542 after 50 freeze-thaw cycles with de-icing salts EN 13687/1 MC substrate (0.40) EN 1766	> 1.4 MPa
Resistance to cracks opening	Crack bridging ability 23°C, EN 1062/7	Static: Class A <sub>3</sub> (cracks 0,5 - 1,25 mm) Dynamic: Class B <sub>1</sub> (100 cycles, 0,03 Hz, crack opening w <sub>0</sub> = 0,15 mm and w <sub>u</sub> = 0,10 mm)
Permeability	To water vapour measured as air equivalent thickness S <sub>d</sub> , EN ISO 7783/1. S <sub>d</sub> = μ·s, μ = water vapour diffusion resistance coefficient, s = thickness of coating <ul style="list-style-type: none"> <li>Class I: S<sub>d</sub> &lt; 5 m (Permeable)</li> <li>Class II: S<sub>d</sub> ≥ 5 and ≤ 50 m</li> <li>Class III: S<sub>d</sub> &gt; 50 (Not Permeable)</li> </ul>	Class I
	To CO <sub>2</sub> measured as air equivalent thickness S <sub>d</sub> , EN 1062/6. S <sub>d</sub> = μ·s, μ = coefficient diffusion to CO <sub>2</sub> , s = thickness of coating (4 mm)	S <sub>d</sub> > 50 m
	To water for capillary absorption EN 1062/3	< 0,1 kg·m <sup>-2</sup> ·h <sup>-0,5</sup>
	To water hydrostatic positive pressure, EN 12390/8	5 bar
	To water hydrostatic negative pressure, UNI 8298/8	2,5 bar
Mechanical resistance	To impact, EN ISO 6272. Class I : 4 N·m, Class II: 10 N·m, Class III: 20 N·m	Class III
	To abrasion, EN ISO 5470/1 (load 1000 g abrading wheel H22/1000 cycles)	Weight loss < 600 mg
UV lights resistance	After artificial weathering (2000 hours of UV radiation and humidity condensation), EN 1062/11	No blistering, cracking or flaking

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## APPLICATION SHEET

### STORAGE

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

### APPLICATION TEMPERATURE

Between +5 °C and +40°C.

## PREPARATION OF THE SUBSTRATE

### STRUCTURALLY SOUND CONCRETE

All the surfaces to be treated must be prepared by water pressure cleaning to remove the loose surface particles, grease, oil and traces of formwork release agents and to ensure a minimum roughness.

### DAMAGED CONCRETE

In these cases, first check the depth of the damage and then repair with MasterEmaco product range.

### WATER LEAKAGE

Water infiltration must be stopped using the fast setting mortar MasterSeal 590 before applying MasterSeal 528. Mix thoroughly for 2 minutes until a smooth, lump-free fluid mix has been obtained.

Let the mix to rest for approx. 1 minute so that the polymer can completely disperse. Then mix again for a maximum of 1 minute. Maintain the same mixing ratio for the various mixes used in the one application so that the colour of the coating remains the same.

Data for the application	
Density EN 1015-6	1,55 kg/litro
Pot life	60 minutes + 20° C 45 minutes + 30° C
Mixing water	4,8 – 5,4 litres 32 – 36 %
Recoating time 20°C	4 – 6 hours
Service temperature	- 20° C – +90°C

## APPLICATION

Application may be by spatula, brush or by spray machine with 4 mm nozzle and pressure of 3-5 bar, in a single layer. Two layers applications are also possible following the right recoating time.

## COVINGS

The covings will be prepared using MasterSeal 590. For details, always refer to the relevant technical sheets.

## WALL TO FLOOR CONNECTIONS

In the case where is not feasible to realize the coving (for example in swimming pools lined with tiles that require an angle of 90° or balconies) reinforce the corners using the tape 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 924, MasterSeal 902 bentonite hydro-swelling water stop or MasterSeal 910 rubber hydro-swelling water stops. For working details, see the relative data sheet and contact the BASF technical expert.

## MIXING

Pour all the mixing water into a bucket (4,8 to 5,4 litres per bag). Slowly add MasterSeal 528 constantly mixing with a low-speed drill (400-600 rpm).



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## TOOLS CLEANING

Tap water.

## RECOATING WITH CERAMIC TILES

MasterSeal 528 can be coated with ceramic tiles after 48 hours at 20°C.



## CURING

After 7 days MasterSeal 528 can be used for waterproofing purposes.

## DECLARATION OF PERFORMANCE (DoP) and CE MARKING

According to the European Regulation (EU No 305/2011 and EU No. 574/2014) the material has its own CE marking labels and DoPs based on EN 1504/2 and EN 14891. These documents are available on demand according European Regulation.





We create chemistry

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For further information, please consult your local BASF Construction Chemicals Italia Spa representative.

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January 2016