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MasterSeal M 616

UV resistant, water-based hybrid polyurethane single-component elastic waterproofing product, for waterproofing residential terraces, balconies and roofs.

DEFINITION OF THE MATERIAL

MasterSeal M 616 is a UV resistant, water-based hybrid polyurethane single-component elastic waterproofing product.
MasterSeal M 616 is in fact classified as waterproofing agent UNI EN 14891 type CM-O1-P (for use under ceramic tiles applied with adhesives):

- CM, cement-based waterproofing product,
- 01, improved crack bridging ability at low temperatures (-5°C);
- P, water-resistant, containing chlorides,

which, as a waterproofing agent for reinforced cement structures, fulfils 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 2.3);
- 8 (IR), suitable for increasing resistivity (Method 8.3).

Available in white, grey and red.

MAIN FIELDS OF APPLICATION

MasterSeal M 616 is suitable as a waterproofing system for balconies, terraces, for example, whether exposed to UV rays or under tiles, and for residential roofs in general.

CHARACTERISTICS

MasterSeal M 616 has the following unique characteristics:

- water-based single-component;
- very easy application with roller or brush;
- the primer and waterproofing membrane are made with the same product;
- no finish required;
- extremely high elastic properties of the membrane
  (elongation at break > 400%);
- resistant against the opening of cracks measuring more than 2.5 mm (crack bridging class A5 UNI EN 1504/2);
- UNI EN 14891 certificate compatible with adhesives for C2 tiles UNI EN 12004 (recommended C2-S1);
- it can be covered with tiles after just 24 hours;
- waterproof (not under pressure);
- it also acts as a protective anti-carbonation product;
- UNI 10686 certified as a asbestos cement encapsulating system, type A in accordance with Min. Decree 20/8/1999;
- it can withstand UV rays and can therefore be left exposed:
- walk-on for balconies and terraces.

THEORETICAL CONSUMPTION

1.8 – 2.5 kg/m^2.

	Kg/m^2
Primer	0.3 – 0.5
First coat	0.75 – 1
Second coat	0.75 - 1

PACKAGES

25 kg and 5 kg cans

STORAGE

Store the material in the original containers, in a dry and covered place at a temperature between 15 and 25°C.

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PERFORMANCE UNI EN 1504/2 "Concrete surface protection systems"

Requirements and test methods			Performance refers to consumption of 2 kg/m²
Adhesion to concrete, UNI EN 1542 on MC substrate (0.40) UNI EN 1766			> 2 MPa
Crack bridging ability, UNI EN 1062/7		Static	at 23°C: Class A_5 (crack > 2.5 mm) at -10°C: Class A_4 (crack 1.25 - 2.5 mm)
		Dynamic	at -10°C: Class B2 (1000 cycles, frequency 0.03 Hz, crack opening wo = 0.15 mm and wu = 0.10 mm trapezoidal
Permeability	Aqueous vapour	Equivalent air thickness Sd, UNI EN ISO 7783/1. Sd = μ·s, μ = Coefficient of vapour diffusion, s = thickness. Class I: Sd < 5 m (Permeable), Class II: Sd ≥ 5 and ≤ 50 m, Class III: Sd > 50 m (Not Permeable)	Sd = 1.3 m Class I
	CO_2	Equivalent air thickness Sd, UNI EN 1062/6. Sd = μ·s, μ = coefficient of CO_2 diffusion, s = thickness	Sd > 100 m
	Water	For capillary absorption UNI EN 1062/3	0.05 $kg \cdot m^{-2} \cdot h^{-0.5}$

PERFORMANCE UNI EN 14891 " Liquid-applied waterproofing products for use under ceramic tiles glued on with adhesives"

Requirements and test methods			Acceptance limits	Performance refers to consumption of 2 kg/m²
Adhesion of adhesives type C2 UNI EN 12004 on MasterSeal M 616	Initial (installation of adhesive after only 24 hours)	UNI EN 14891 A.6.2	≥ 0.5 MPa	> 1 MPa
	After immersion in water	UNI EN 14891 A.6.3	≥ 0.5 MPa	> 1 MPa
	After thermal ageing	UNI EN 14891 A.6.5	≥ 0.5 MPa	> 1 MPa
	After freeze/thaw cycles	UNI EN 14891 A.6.6	≥ 0.5 MPa	> 1 MPa
	After contact with saturated limewater	UNI EN 14891 A.6.9	≥ 0.5 MPa	> 1 MPa
	After contact with chlorinated water	UNI EN 14891 A.6.8	≥ 0.5 MPa	> 1 MPa
Impermeability to water UNI EN 14891 A.7			No penetration Weight increase < 20 g	No penetration Weight increase 1 g
Crack bridging ability, UNI EN 14891 A.8		at 23°C	≥ 0.75 mm	> 3 mm
		at -5°C	≥ 0.75 mm	> 1.3 mm

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APPLICATION SHEET

Type of substrate	Type of Primer to be used
Cement-based	MasterSeal M 616
Brick and stone	MasterSeal M 616
Tiles	MasterSeal M 616
Bituminous sheath	MasterTop P 686W
Non ferrous and stainless steel metal surfaces	MasterSeal P 684
Plastic surfaces	MasterSeal P 691
Steel	MasterSeal P 681

For more details on MasterTop P 686W, MasterSeal P 684, MasterSeal P 681 and MasterSeal P 691 primers, refer to the relative technical data sheets.

TEMPERATURE

It can be applied when the ambient temperature is between +10°C and +40°C.

PREPARATION OF CEMENT-BASED SUBSTRATE

Eliminate any parts that are coming detached, dust, dirt, grease and anything that can prevent the coating from adhering. With concrete floor slabs, roughen the surface by sanding or polishing.
Any macro defects need to be preventively repaired with mortars in the MasterEmaco line.
Always remove dust from the surfaces with a vacuum prior to applying primer.

PREPARATION OF MASONRY SUBSTRATE

Bedding plaster and mortars need to be sound and firmly adherent to the substrate. Any repairs need to be made with mortar from the MasterEmaco line, suitable for the specific use.
Always remove dust from the surfaces with a vacuum prior to applying primer.

PREPARATION OF TILED SUBSTRATE

It is crucial to preventively assess the extent of deterioration of the ceramic cladding (broken or detached tiles, saturated screed, cracked joints), as well as the extent of moisture penetration in the underlying screed.
These problems need to be identified and resolved before proceeding with the application of the waterproofing system.
Any glazed layer needs to be removed through abrasive treatment such as sanding or polishing, for example.
A precise and detailed assessment is always subject to a visit to the site.
It is always advisable to seek the opinion of the BASF CC Technical Service.
Always remove dust from the surfaces with a vacuum prior to applying primer.

PREPARATION OF SUBSTRATE WITH BITUMINOUS SHEATH

For bituminous sheath surfaces special care must be taken on the degraded areas. The surface of the bituminous sheath must not have any loose parts, grease, oil, dust and any element that could prevent the material from adhering. Any bubbles or detached parts must be eliminated and repaired.
Preparation is carried out through washing with high pressure water.
The substrate is then primed with MasterTop P 686 W incorporated with MasterTop F5. For this type of substrate, always contact the BASF CC Technical Service for extensive information.

PREPARATION OF METAL SUBSTRATE

Roughen the surface until the substrate is smooth and there are no exposed metal oxides. On joints, riveting and connections, always use the MasterSeal 944 self-adhesive reinforcement strip.
Always remove dust from the surfaces with a vacuum prior to applying primer.
The substrate then needs to be primed with MasterSeal P 681.

PREPARATION OF THE PLASTIC OR NON-FERROUS METAL SUBSTRATE

It must be cleaned with high pressure water or with solvent, detergent or degreasing agent. The specific assessment is linked to the specific case and therefore an on-site inspection. It is always advisable to seek the opinion of the BASF CC Technical Service.
Always remove dust from the surfaces with a vacuum cleaner.
The substrate must then be primed with MasterSeal P 684 for non-ferrous metal or stainless steel substrates and with MasterSeal P 691 for plastic substrates.

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WALL-FLOOR CONNECTION

Reinforce the wall-floor connection using the MasterSeal 924 or MasterSeal 944 waterproofing strip. For details on execution, consult the relative technical data sheets.

EXPANSION JOINTS

It is necessary to observe the existing joints on the screed by sealing them with MasterSeal NP 474. Sealing can remain exposed and not covered with MasterSeal M 616.

APPLICATION UNDER TILE AND EXPANSION AND CONTRACTION JOINTS

In terms of setting with MasterSeal M 616 under tiles, it is necessary to observe the existing joints on the screed by sealing them with MasterSeal NP 474, for example. Sealing must also be carried out on the ceramic flooring.

REINFORCEMENT WITH MESH

With substrates such as creeping bituminous sheath, for example, or when cracks caused by movement exceed 2.5 mm, install reinforcement mesh MasterSeal FX Mesh between the second and third layer of MasterSeal M 616 coating. Alternatively, treat the critical bituminous sheath joints with self-adhesive waterproofing strip MasterSeal 944 and then proceed with the application of MasterSeal M 616.

SUBSTRATE HUMIDITY

The substrate must have less than 6% humidity.

MIXING

Blend the product with a mixer drill at low speed for approximately 1 minute.

INSTRUMENTS FOR APPLICATION

With short-pile roller for solvent-based coatings, with soft bristle paintbrush or with airless pump (minimum pressure 220 bar, minimum capacity 5.1 litres/minute and nozzle diameter > 0.83 mm).

PRIMER APPLICATION

Apply MasterSeal M 616 diluted with 10% water.

APPLICATION OF THE WATERPROOFING PRODUCT

After the first coat of MasterSeal M 616 applied as a primer, wait a minimum of 2 hours at 20°C before proceeding with the application of the next coats of waterproofing agent.
Apply at least 2 coats of MasterSeal M 616 following the minimum dry-to-recoat time stated in the table.

Technical data	
Density	1.25 kg/litre
Solids in weight	55 %
Dry-to-touch time at 20°C	1 hour
Dry-to-recoat time at 20°C	5 hours
Rain-proof	8 hours
Working temperature	- 5° C – +80°C
Walk-on at 20°C	24 hours
Cleaning the tools	Water

Protect the wet film against the direct effect of water for the first 24 hours.
If it is covered with ceramic coatings, the last layer needs to be incorporated to saturation with MasterTop F 5 quartz filler by 1-2 kg/m^2.

CLEANING THE TOOLS

Mains water.

POOLING WATER

Prevent prolonged pooling of water through the correct implementation of slopes.

DRY-TO-RECOAT WITH CERAMIC COATINGS

It can be covered with adhesives for ceramic tiles and stone materials after 24 hours at 20°C. For the best performance we recommend C2-S1 UNI EN 12004 types of adhesives.

DECLARATION OF PERFORMANCE (DoP) and CE MARKING

In compliance with European Regulations (EU No 305/2011 and EU No. 574/2014), the product features the CE marking according to both UNI EN 1504/2 and UNI EN 14891 and relative DoPs (Declaration of Performance).

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Since 16/12/1992, BASF Construction Chemicals Italia Spa has been operating under a Certified Quality System in compliance with UNI EN ISO 9001. Furthermore, the Environmental Management System is certified according to UNI EN ISO 14001 and the Safety Management System is certified according to OHSAS 18001. Environmental sustainability: Green Building Council Partner since 2009.

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This edition supersedes all previous ones.

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