

UV resistant, water-based hybrid polyurethane single-component elastic waterproofing coating

DESCRIPTION

MasterSeal M 616 is a UV resistant, water-based hybrid polyurethane single-component elastic coating for roof waterproofing and solar reflective coating.

MasterSeal M 616 is classified as waterproofing agent UNI EN 14891 type DM-01 (for use under ceramic tiles applied with **MasterTile** range type C2 tile adhesives).

TYPICAL APPLICATIONS

MasterSeal M 616 is suitable as a waterproof coating.

- For covered and exposed roof on both new and refurbishments projects.
- Over spray-applied polyurethane foam.
- For wet areas, balconies and terraces.

ADVANTAGES

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 when used for cementitious substrates
- No finish required
- It can be covered with tiles after just 24 hours
- It is also a protective anti-carbonation coating
- It can withstand UV rays and can therefore be left exposed
- It has high solar reflective index, thus reduces the solar heat gain on roof, requiring less energy for cooling

PACKAGING AND COLORS

MasterSeal M 616 is supplied in 20 kg and available in White, Red and Grey.



PERFORMANCE EN 1504-2 "Concrete surface protection systems"

Requirements	s and test m	ethods	Performance refers to consumption of 2 kg/m ²	
Adhesion to concrete, EN 1504-2 on MC substrate (0.40) EN 1766			>2 MPa	
Crack bridging ability, EN 1062/7		Static	at 23ºC: Class A₅ (crack >2.5 mm) at -10ºC: Class A₄ (crack 1.25 – 2.5 mm)	
		Dynamic	at -10ºC: Class B2 (1000 cycles, crack opening wo = 0.15 mm and wu = 0.10 mm	
Permeability	Aqueous vapour	Equivalent air thickness Sd, EN ISO 7783/1. Sd = u s, u = 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 ≤ 5 m Class I	
	Co ₂	Equivalent air thickness Sd, EN 1062/6. Sd = u s, u = coefficient of CO_2 diffusion, s = thickness	Sd >100 m	
	Water	For capillary absorption EN 1062/3	0.05 kg m ² h ^{0.5}	

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

Requirements ar	nd test method	S	Acceptance limits	Performance refers to consumption of 2 kg/m ² (MasterTile FLX 23)
Adhesion of adhesives type C2 EN 12004 on MasterSeal M 616	Initial (installation of adhesive after only 24 hours)		> 0.5 MPa	> 1 MPa
	After immersio	n in water	> 0.5 MPa	> 0.5 MPa
	After thermal a	ageing	> 0.5 MPa	> 1 MPa
	After freeze/th	aw cycles	> 0.5 MPa	> 0.5 MPa
	After contact w	vith saturated limewater	> 0.5 MPa	> 0.5 MPa
	After contact w	vith chlorinated water	> 0.5 MPa	> 0.5 MPa
Impermeability to water EN 14891 A.7			No penetration Weight increase < 20 gm	No penetration < 20 gm
Crack bridging abil	ity, EN 14891	at 23°C	> 0.75 mm	> 1 mm
A.8		at -5⁰C	> 0.75 mm	> 1 mm



PHYSICAL/TYPICAL PROPERTIES*

Density	1.230 - 1.270 g/cm ³
Solid content by weight	55%
Dry-to-touch time at 20°C	1 h
Dry-to-recoat time at 25°C	5 h
Walk-on at 25°C	24 h
pH value	8.00 - 9.00
Elongation at break ASTM D 412	> 400%
Tensile strength ASTM D 412	> 2 N/mm ²
Tear resistance ISO 34-1	> 10 kN/m
Shore A Hardness ASTM D 2240	80
Solar Reflective Index ASTM E 1980-11	> 120
(MasterSeal M 616 White)	
Solar Reflective Index ASTM E 903-12	> 96
(MasterSeal M 616 White)	
Thermal emittance ASTM C1371-15	> 0.80
(MasterSeal M 616 White)	
Light reflective value (LRV) (BS 8493)	95%
Static crack bridging ASTM C836 / C836M - 18	No sign of cracks, loss of adhesion or any other type of
	failure was observed after completion of the up and
	down movement
Extensibility after heat aging ASTM C 1522-05(2013)	No sign of cracks, tears, or holes observed after
	extending the membrane
Water Vapour Transmission ASTM E96 / E96M - 16 at 23°C	0.178 g/m ² *h or 4.24 g/m ² *24h
Behaviour after artificial weathering for 100 hours as per	No significant changes observed after 1000 hours of UV
ASTM G 154 2016a	exposure

APPLICATION GUIDELINES

Type of substrate	Type of Primer to be used
Cement-based	MasterSeal M 616 diluted with 10% water
Brick and stone	MasterSeal M 616 diluted with 10% water
Nonferrous and stainless-steel metal surfaces	MasterSeal P 616 or MasterSeal P 770

PREPARATION OF CONCRETE SUBSTRATE

All surfaces shall be free from oil, grease and friable matter and general curing compounds (wax-based curing membranes shall not be used in areas to be overcoated). Concrete surfaces shall be cleaned using high pressure water jetting, grit blasting or surface grinding.

Repair substrate defects using products from the **MasterEmaco** range.

Use diluted **MasterSeal M 616** as a priming coat. Always remove dust from the surfaces with a vacuum prior to application of primer.

Treat concrete joints, wall-floor connections, and cracks with a bandage of **MasterSeal M 616** reinforced with a 50-60 g/m² geotextile.



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** range, suitable for the specific use.

Use diluted **MasterSeal M 616** as a priming coat. Always remove dust from the surfaces with a vacuum prior to application of primer.

Treat all wall-floor connections with a bandage of **MasterSeal M 616** reinforced with a 50-60 g/m² geotextile.

PREPARATION OF METAL SUBSTRATE

All surfaces shall be free from oil, grease, dust and any friable matter. Old steel and metal sheet need to be sand blasted, or wire brushed sufficiently to remove rust and/or hardened dirt.

Wipe the surface with cleaning solvent to remove any contaminants prior to priming application.

Close any small gaps and holes using a suitable sealant from **MasterSeal** range. Larger gaps may require sealing using **MasterSeal GP Foam**.

Use **MasterSeal P 616** or **MasterSeal P 770** for metal substrates.

Treat all joints and sheet overlaps with a bandage of **MasterSeal M 616** reinforced with a 50-60 g/m² geotextile, prior to main coating application.

EXPANSION / CONTRACTION JOINTS

All joints must be sealed using sealants from **MasterSeal** sealant range. Sealing can remain exposed and not covered with **MasterSeal M 616**, depending on site conditions. Please contact Master Builders Solutions Technical department for more details.

SUBSTRATE HUMIDITY

The substrate must have less than 5% humidity.

TEMPERATURE

It can be applied when the ambient temperature is between $+10^{\circ}$ C and $+40^{\circ}$ C.

APPLICATION

Stir **MasterSeal M 616** using a low-speed mixer prior to use.

Apply at least 2 coats of **MasterSeal M 616**. Subsequent coats must be applied at least 5 hours following the initial coating application and shall be done at perpendicular direction.

If the coating is to be laid over with tiles using proprietary adhesives, blind the last layer with **MasterTop SR 3** silica sand at a rate of 1-2 kg/m². Remove excess sand after 24 hours using a stiff broom/brush and vacuum cleaner.

Allow the final application to dry for at least 24hrs before exposure to water.

COVERAGE / YIELD

1.3 – 2.3 kg/m².

Primer	0.3 kg/m ²
First coat	0.5 – 1 kg/m ²
Second coat	0.5 – 1 kg/m ²

The above coverage serves as a guide and does not include wastage and variations due to surface undulation and absorption.

CLEANING

Wet **MasterSeal M 616** can be cleaned using water. Dried material can only be removed mechanically.

STORAGE AND SHELF LIFE

Store in original containers, under dry conditions and a temperature between 15-25°C. Do not expose to direct sunlight.

Shelf life is 12 months when stored as above.



HEALTH AND SAFETY

MasterSeal M 616 is non-toxic, but as with other products containing cement it has an alkaline nature and thus can be irritating to skin and eyes. Wear simple dust masks and gloves when handling. Keep out of reach of children. Wash off splashes of material with clean water. If irritation persists, seek medical advice.

Refer to Material Safety Data Sheet for further information.

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

* Properties listed are based on laboratory controlled tests.

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