

MasterSeal® M 391

Glossy epoxy coating certified for contact with foodstuffs according to UE n.10/2011.

DEFINITION OF THE MATERIAL

MasterSeal M 391 is a 100% solid glossy epoxy coating, certified for contact with foodstuffs according to UE n.10/2011.



MAIN FIELDS OF APPLICATION

MasterSeal M 391 è is mainly recommended for the coating of wine vessels, tanks for holding vegetable oil and cereal bins and potable water and all sues foreseen by the UE regulation n. 10/2011.



MasterSeal M 391 is available in the following versions:

- **Yellow**, specific for contact with wine, preferably white one;
- **Red**, specific for contact with wine, preferably red one;



- **Light blue** and **White**, specific for contact with oil, cereals, potable water and other foodstuffs;

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FEATURES

MasterSeal M 391:

- Is formulated according to UE n. 10/2011 (European Commission 14/1/2011) positive list and certified according for the migration tests with following simulants:

Simulant	Type	MasterSeal M 391 color
Ethanol 10 %	A	Yellow and Red
Acetic acid 3 %	B	Yellow and Red
Ethanol 20 %	C	Yellow and Red
Ethanol 50 %	D1	Yellow and Red
Dry food stuff	E	Light blue and White
Vegetable oil	D2	Light blue and White
Potable water	--	Light blue and White

- fulfills the requirements and restriction of the CE regulation n.1895/2005 about NOGE, and BADGE (epoxy derivatives);
- is certified for contact with potable water according to DM 174 6/4/2004;
- CE marked according to the EN 1504/2 (Protection of concrete).

CONSUMPTION

Product	Function	kg/m ²
MasterSeal P 385	Primer for damp substrate	0,5
	Primer for negative pressure	1,5
MasterSeal M 391	Coat	0,6

PACKAGING

Product	Component	Pack	Kg
MasterSeal P 385	A	Pail	4,25
	B	Pail	4,25
	C	Bag	15
	A+B+C		23,5

Product	Component	Pack	Kg
MasterSeal M 391 Yellow	A Yellow	Pail	25
	B	Pail	25
	2A+B	2 Pails A + 1 pail of B	75

Product	Component	Pack	Kg
MasterSeal M 391 Red	A Red	Pail	25
	B	Pail	25
	2A+B	2 Pails A + 1 pail of B	75

Product	Component	Pack	Kg
MasterSeal M 391 Light blue	A Light blue	Pail	16
	B	Pail	4
	A+B	1 Pail of A + 1 Pail of B	20

Product	Component	Pack	Kg
MasterSeal M 391 White	A White	Pail	16
	B	Pail	4
	A+B	1 Pail of A + 1 Pail of B	20

STORAGE

MasterSeal M 391 must be stored in a shady, dry place at a temperature between +10 and +35°C inclusive.

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PERFORMANCE

Test methods	Performance (400 µm)
Adhesion to the concrete, EN 1542: substrate MC (0.40) to EN 1766	> 3 MPa (cracking of substrate)
Coefficient of water absorption, EN 1062/3	< 0,1 kg·m ⁻² ·h ^{-0,5}
Abrasion resistance, EN ISO 5470/1 (load 1000 g grinding wheel H22/1000 cycles)	Weight loss < 100 mg
Impact resistance, UNI EN ISO 6272 (Class I : 4 N·m, Class II: 10 N·m, Class III: 20 N·m)	Class II
Permeability to water vapour measured as air equivalent thickness Sd, EN ISO 7783/1. Class I : Sd < 5 m, (Permeable), Class II : Sd ≥ 5 e ≤ 50 m, Class III : Sd > 50 (Not Permeable)	Class III
Permeability to CO ₂ , measured as air equivalent thickness Sd , EN 1062/6	Sd > 50 m
Resistance to artificial weathering (2000 hours of UV radiation and condensation), EN 1062/11	No blistering, cracking or flaking (yellowing)
Resistance of positive pressure , EN 12390/8	5 bar
Resistance of negative pressure with MasterSeal P 385, UNI 8298/8	2,5 bar

APPLICATION PROCEDURE

TEMPERATURE

Application may be at an ambient temperature anywhere between +5°C and +40°C.

PREPARATION OF THE SUBSTRATE

Prior to applying the primer MasterSeal P 385 it is indispensable to check the concrete surfaces for damage or contamination by oils, grease or other substances. Any loose, damaged or contaminated concrete must be removed and then the surface made good using products from the MasterEmaco range. MasterSeal P 385 must be applied on sandblasted surfaces (this does not apply to areas repaired with MasterEmaco products), which have been cleaned and freed of dust using compressed air.

MasterSeal M 391 needs no primer for application on steel. Such surfaces must be sandblasted to grade SIS Sa 3 (SSPC - SP 5) with profile equal to grade 11 of Rugotest No. 3.

APPLICATION OF MasterSeal P 385

The product should be applied onto saturated substrates with a dry surface. Strongly absorbent surfaces should therefore be soaked with water prior to application of MasterSeal P 385 and any excess water removed with cloths or air jet.

Pour component B (hardener) into component A (base) and mix them thoroughly together until a smooth mix is obtained.

Then add component C (aggregate) mixing all the time with a mechanical mixer. Continue mixing until a smooth, lump-free mix is obtained.

MasterSeal P 385 may be applied as it is with a squeegee for shallow filling work, or diluted with 10-20% water when applying with a brush, roller or spray. Always apply the material in two coats at an interval of 16-24 hours one from the other.

MasterSeal P 385 is abrasive and it is therefore advisable to use airless membrane equipment. Immediately after use, thoroughly clean the working tools with water and detergent.

Technical Data

Open pot life	1 hour at + 20° C
Mixing ratios	18%A, 18%B, 64%C
Recoating time with resinous coatings at 20°C (min/max after cleaning)	48 hours - unlimited
Working temperature	- 20° C – +80°C
Hard dry	7 days (at + 20° C)

Airless pump

Nozzle equivalent diameter	0.026 - 0.030 in
Spraying angle	50 - 80 °
Nozzle pressure	200 - 250 bar
Minimum flow rate	10 litres/minute
Hose diameter	3/8 in
Maximum hose length	10 m
Filter	60 Mesh (equal to 250 micron opening and 590 mesh/cm ²)

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The film formed by this product requires 7 days at 20°C and 65% r.h. to terminate the hydration process and become suitable for use in the envisaged conditions. It may, however, be coated with MasterSeal M 391 already after (but not before) 48 hours in a well ventilated environment. In each specific case check that the surface humidity is no more than 4%.

APPLICATION OF MasterSeal M 391

TEMPERATURE AND HUMIDITY

The application can only take place when the ambient temperature is between 10 - 40 ° C.

MasterSeal M 391 has a certain sensitivity to atmospheric moisture in particular manner at low temperatures. It is important to provide air circling in the job site in order to maintain the relative humidity below 50%. In the presence of high humidity can present phenomena of light bleaching and sweating. Such defects, purely superficial, must always be removed prior filling the tanks through the washing procedure.

APPLICATION OF MasterSeal M 391 Yellow and Red

The product must NOT be diluted.

Mix the two components prior to use, using a drill with whisk attachment.

The product has a limited open pot life. For these reasons it may be applied by roller (for small surface areas and therefore for small quantities) or by spray, but only using airless equipment with bi-mixer like WIWA Duomix Series 230, WIWA FlexiMix II or equivalent. Only one is always recommended for a total of 0,6 kg/m².

Thoroughly clean the working tools with epoxy thinner E100.

Dati tecnici	
Density, kg/litre	A: 1,5 ± 0,02 B: 1,5 ± 0,02 A+B: 1,5 ± 0,02
Solid content by volume	100%
Pot life	20 minutes (20° C)
Mixing ratio by weight and volume	2A / 1 B
Tack free	20°C: 4 – 8 hours
Dry in depth	20°C: 12 – 48 hours
Service temperature (air)	- 20° C – +80°C
Complete hard	7 day (20° C)

APPLICATION OF MasterSeal M 391 Light blue and White

The product must NOT be diluted.

Mix the two components prior to use, using a drill with whisk attachment. The product may be applied by roller or by airless spray. Two coats are always recommended for a total of 0,6 kg/m².

Airless pump	
Nozzle equivalent diameter	0.018 - 0.023 in
Nozzle pressure	180 – 220 bar
Compression ratio	60 / 1

Dati tecnici	
Density, kg/litre	A: 1,53 ± 0,02 B: 1,00 ± 0,02 A+B: 1,38 ± 0,02
Solid content by volume	100%
Pot life	> 60 minutes (20° C)
Mixing ratio by weight	4 A / 1 B
Tack free	20°C: 6-8 hours
Dry in depth	20°C: 24-36 hours
Recoating time	20°C: 24-48 hours
Service temperature (air)	- 20° C – +80°C
Complete hard	7 days (+ 20° C)

It is advisable to prepare only the quantity of product each time that can be applied during its open pot life. High temperatures accelerate hardening and reduce the workability time of the prepared material.

Thoroughly clean the working tools with epoxy thinner E100.


CLEANING PROCEDURE OF THE SURFACES BEFORE FILLING THE TANKS

Wait at least 2 weeks from the application before starting up the tank. During the winter or still persistent low temperature conditions can lengthen the curing time.

Before filling the tanks with the food it is essential to provide for a washing of the same with a 10% aqueous solution of soda to disinfect surfaces and remove any salts present. It then proceeds with a thorough rinsing with hot water. This process may cause a slight loss of gloss of the film which, however, is not going to change the technical features.

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UNE EN 1504 - 2	
Surface protection product for the principles and methods 2.2, 5.1 and 8.2 defined in EN 1504-9	
Capillary absorption	≤ 0,1Kg/m ² ·h0.5
Water vapour permeability	Class III
Permeability to CO ₂	Sd > 500 m
Adhesion strength by pull-off test	> 3 N/mm ²
Abrasion resistance (Taber)	Mass loss < 100 mg
Resistance to severe chemical attack: reduction in hardness < 50%	Group 4: Class II Group 5a: Class II Group 9: Class II Grupo10: Class II Grupo11: Class II Grupo12: Class II Group 13: Class I
Impact Resistance	Class II
Reaction to fire	Class F
Dangerous substances	Comply with 5.3 of EN 1504-2

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The owner, his representative, or the contractor is responsible for checking the suitability of our products as to the intended use and aims.

Supersedes all prior issues on this product.

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