

PRODUCT DATA SHEET

Sikagard® M 391

(formerly MSeal M 391)

Glossy epoxy coating suitable for contact with foodstuff and potable water

DESCRIPTION

Sikagard® M 391 is a two component 100% solid epoxy coating, suitable for contact with drinking water and certified for contact with foodstuff, specifically solid foodstuff and vegetable oil. Sikagard® M 391 is available in two colours: light blue and white.

USES

Sikagard® M 391 is recommended for containments of vegetable oil, cereal, sugar and other solid foodstuff as well as for potable water reservoirs.

Please check the local requirements for these sensitive applications! If in doubt, contact your local Sika representative for support.

FEATURES

- 100% solids content.
- Can be applied by roller, brush and airless spray machine
- Formulated according to the limit and restriction of the CE regulation n.1895/2005 about NOGE and BADGE (epoxy derivatives).
- CE-certified according to EN 1504-2 (concrete protection)

PRODUCT INFORMATION

Packaging	Sikagard® M 391 is available in 20.2 kg Kits consisting of 16 kg Part A and 4.2 kg Part B in metal pails.
Colour	Light blue and white.
Shelf life	12 months after date of production in unopened original containers, if stored at below mentioned storage conditions.
Storage conditions	Sikagard® M 391 should be stored under cover and clear off the ground. Protect the materials from freezing and all sources of moisture. No permanent storage over +30 °C.

- Does not contain aromatic amines, phthalates or benzylic alcohol.
- Certified for contact with potable water according to the Italian Ministerial Decree DM 174.
- Certified according to regulation EU 10/2011 (European Commission 14/1/2011) for the migration test with following simulants:

Simulant	Type
Vegetable oil	D2
Potable water	--

CERTIFICATES AND TEST REPORTS

- Certificate of Conformance Foodstuff (ISEGA)
- HYGIENIC CERTIFICATE (PZH)
- Test Report Potable water DM 174 6/04/2004 at 40°C (CHELAB)
- Test Reports Potable water at 60°C 1st, 2nd and 3rd contact (CHELAB)
- CE-Certification according to EN 1504-2 (Protective Coating)

Density	Part A: approx. 1.43 kg/l Part B: approx. 1.00 kg/l Mixed product: approx. 1.34 kg/l
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Solid content by volume	100 %
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TECHNICAL INFORMATION

Abrasion resistance	weight loss with grinding wheel H22 and load 1000 g (1000 cycles)	< 100 mg	(EN ISO 5470-1)
Resistance to impact	Class II: ≥ 10 Nm		(EN ISO 6272-1)
Tensile adhesion strength	on concrete	> 3 N/mm ² (substrate failure)	(EN 1542)
Reaction to fire	Class E _{fl}		(EN 13501-1)
Behaviour after artificial weathering	No blistering, cracking or flaking. Yellowing.		(EN 1062-11)
Permeability to water vapour	S _D > 50 m (not permeable)		(EN ISO 7783-1)
Capillary absorption	< 0.1 kg·m ⁻² ·h ^{-0.5}		(EN 1062-3)
Water penetration under pressure	Resistance to positive pressure	up to 5 bar	(EN 12390-8)
Water penetration under negative pressure	Resistance to negative pressure	up to 2.5 bar	(UNI 8298-8)
	Tested in combination with Sikagard®-385 Epocem® as primer coat.		
Permeability to carbon dioxide	S _D > 50 m		(EN 1062-6)

APPLICATION INFORMATION

Mixing ratio	By weight (Part A : Part B)	3.8 : 1
	By volume (Part A : Part B)	2.66 : 1
Consumption	A total of approx. 0.6 kg/m ² are required for two coats.	
Layer thickness	Minimum dry film thickness: 400 µm (in 2 coats)	
Material temperature	+10 °C to +40 °C	
Ambient air temperature	+10 °C to +40 °C	
Substrate temperature	+10 °C to +40 °C	
Pot Life	Approx. 60 Minutes (at +21°C and 60% relative humidity). Higher temperatures or lower relative humidity will shorten this time, and vice versa.	
Tack free time	6 - 8 hours (at +20 °C)	
Waiting time to overcoating	24 - 48 hours (at +20 °C, mainly depends on relative humidity)	
Applied product ready for use	Fully cured after 7 days (at +20 °C)	

SYSTEM INFORMATION

Systems	Sikagard® M 391 is the main coating of the Sikagard®-6391 system.
System structure	The Sikagard®-6391 system consists of a primer and the protective coating Sikagard® M 391:

Standard Primer: Sikagard® P 770 - Xolutec® primer for various substrates dry or wet (but visibly dry).

Alternative Primer coat for humid concrete: Sikagard®-385 Epocem®: ECC-based primer coat for non-absorbent or damp mineral surfaces, exposed to negative and osmotic pressure.

Protective Coating (minimum 2 coats): Sikagard® M 391 - Epoxy coating for water, oil and solid foodstuff tanks.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Do not apply at temperatures below +10 °C nor above +40 °C
- For applications in drinking water or foodstuff tanks, check local regulations and guidelines.
- Solvents, sand or other products that could affect the product properties must not be added.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

On all mineral substrates, priming is mandatory and essential. Depending on the substrate quality the following primers are approved for use:

- Sikagard® P 770 - Xolutec primer for various smooth substrates dry or wet (but visibly dry).
- Sikafloor® P 622 - Epoxy primer for dry mineral substrates.
- Sikagard®-385 Epocem®: ECC-based primer coat for non-absorbent or damp mineral surfaces, exposed to negative and osmotic pressure.

Follow the application guideline in the relevant product data sheet of the primer used. Please strictly follow the waiting times given there before applying Sikagard® M 391.

Prior to applying the primer 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 repaired using suitable Sika products. For the detailed substrate preparation follow the guidelines given in the product data sheet of the recommended primers.

Steel surfaces must be sandblasted to grade SIS Sa 3 (SSPC - SP 5) with a profile equal to grade 11 of Rugotest No. 3. On these prepared, clean steel surfaces Sikagard® M 391 does not require a primer.

MIXING

Sikagard® M 391 is supplied in two separate components, in the correct quantities, ready for use. Pour Part B into Part A, ensuring to completely empty the pack of Part B, and mix with a slow speed drill and paddle (maximum 400 rpm) until a homogeneous mixture is obtained. Avoid the inclusion of air. 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.

APPLICATION

Sikagard® M 391 does not contain aromatic amines nor bisphenol F to make the formulation compliant with the European regulations regarding materials in contact with food. These restrictions also necessarily lead to the need of paying greater attention to the application stage in order to meet the requirements of food safety and durability of the intervention. Sikagard® M 391 has a certain sensitivity to atmospheric moisture, especially at low temperatures. Therefore, it is important to provide air circulation on the jobsite in order to maintain the relative humidity below 50 %. In the presence of high humidity phenomena like light bleaching and sweating can occur. Such defects, purely superficial, must always be removed through a washing procedure, before the tanks are filled.

The application should take place at temperatures between +10 °C and +40 °C.

Apply the mixed material using a brush, a short hair roller (recommended: nylon 18 mm) or an air-less spray gun. Always apply two coats with a consumption of approx. 0.3 kg/m² per coat. Respect the waiting times in between the coats.

This product must not be diluted.

Airless spray recommendations:

Nozzle diameter	0.018 - 0.023 inches
Nozzle pressure	180 – 220 bar
Compression ratio	60 : 1

Wear a particle filter mask P2.

It must be tested beforehand if the used equipment is suitable for spray application.

CURING TREATMENT

Wait at least 2 weeks after the application of Sikagard® M 391 before returning the food or drinking water tanks into operation. During winter, persistent low temperature conditions can lengthen the curing time.

Before filling the tanks with any foodstuff or drinking water, it is essential to wash them with a 10% aqueous solution of soda to disinfect surfaces and remove any salts present. Then proceed with a thorough rinsing with hot water. This process may cause a slight loss of gloss of the film which does not affect the performance of the coating.

CLEANING OF EQUIPMENT

Tools can be cleaned with epoxy cleaner while still wet. Once the material has cured, it can only be removed mechanically.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

LEGAL NOTES

Any information or suggestions for use concerning Sika's products, which we either in writing or orally have given buyers or end-users of the product, have been given in good faith based on our own experiences and based on approved praxis and the technological and scientific knowledge on the time of giving such suggestions and information, which are given without any type of guarantees, and which do not lead to any further responsibility from Sika Danmark A/S, besides what is stated in the sales agreement in question. The buyer or end-user should themselves investigate or otherwise make sure, that our products are suitable for the use in question and further make sure that the products are kept and used correct and in agreement with the published rules and considering the actual conditions in order to avoid damages or less satisfactory results. Any order is accepted and any deliverance is affected according to the general terms of sales and delivery from Sika Danmark A/S, which are considered known and accepted, and which could be handed out when asked for. Our catalogues are not up-dated automatically. The present product data sheet is only for use in Denmark. Values stated in the present product data sheet should be seen as recommended, unless stated otherwise.

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