

PRODUCT DATA SHEET

Sika® Permacor®-136 TW

Epoxy coating for use in the potable water supply,
100% volume solids

DESCRIPTION

Sika® Permacor®-136 TW is a 2-pack epoxy coating for steel and concrete. Solvent free according to Protective Coatings Directive of German Paint Industry Association (VdL-RL 04). The coating is tough elastic, mechanically resistant and resistant to abrasion, impact and shock.

USES

Sika® Permacor®-136 TW may only be used by experienced professionals.

Sika® Permacor®-136 TW is ideally suited for the corrosion protection of surfaces such as steel, stainless steel and aluminium, and for the protection of mineral surfaces made of concrete and cement plaster in direct contact with media.

Sika® Permacor®-136 TW is predominantly used as an interior coating for tanks, silos, containers, pipes (nominal diameter > 300 mm) and equipment used in potable water supply as well as in the food and beverage industry.

CHARACTERISTICS / ADVANTAGES

- Suitable for potable water, many foodstuffs, chemicals, cleaning agents and disinfectants
- Very good adhesion to steel, stainless steel, aluminium and concrete
- Economical one-coat application
- No extensive post-treatment before initial filling
- Pinhole detection possible on metallic surfaces

APPROVALS / CERTIFICATES

- Conforms to the coating guideline of the German 'Umweltbundesamt' (UBA = Federal Environment Agency) in contact with potable water.
- Tested according to DVGW (German Association for Gas and Water) work-sheet W 270 (growth of microorganisms in potable water).
- Physiologically harmless (expert report by Nehring institute).

PRODUCT INFORMATION

Packaging	Sika® Permacor®-136 TW	13 kg and 6.5 kg net.
	SikaCor® Cleaner	160 l and 25 l
Appearance / Colour	Blue, beige, redbrown Finish: Glossy	
Shelf life	Min. 2 years	
Storage conditions	In originally sealed containers in a cool and dry environment.	
Density	~1.35 kg/l	
Solid content	~100 % by volume ~100 % by weight	

TECHNICAL INFORMATION

Chemical Resistance

Depending on the medium, available upon request.
No long term resistance to ozone containing media.

Temperature Resistance

Dry heat up to approx. + 100°C

SYSTEM INFORMATION

System

Steel, stainless steel and aluminium

Airless application:

1 x 400 µm Sika® Permacor®-136 TW

Roller:

3 x 150 µm Sika® Permacor®-136 TW

Concrete

A) System with polymer cement concrete (PCC) base coat:

2 x Icoment®-540 mortar (alternatively levelling with SikaTop® TW)

Work 1 x Sika® Permacor®-136 TW well into the substrate - pore-free surface

Apply 1 x Sika® Permacor®-136 TW by airless spraying or

Apply 2 x Sika® Permacor®-136 TW with roller or brush

The practical consumption depends on the surface properties and on the application method.

Concrete repair measures should be carried out using products suitable for potable water. Refer to the product data sheets of Sika MonoTop®-613 and SikaTop® TW regarding this point. Intensive post-treatment (3 - 4 days) must be ensured.

The concrete surfaces must be appropriately prepared before coating with Sika® Permacor®-136 TW. Levelling can also be accomplished with SikaTop® TW. However the base layer has to be Icoment®-540 mortar. Layer thickness 2 - 3 mm.

This base layer must be absolutely pore-free. Intensive post-treatment over 4 days. Prior to the coating with Sika® Permacor®-136 TW, the residual moisture content of the substrate must be measured at not more than 4 % by volume using the CM device.

B) System with epoxy base coat:

1 - 2 Sika® Permacor®-136 TW levelling mortar

1 x Sika® Permacor®-136 TW applied by airless spraying

The tensile strength of the concrete substrate should be at least 1.5 N/mm².

The residual moisture content of the substrate must be measured at not more than 4 % by volume using the CM device.

The waiting time until the levelling mortar can be overcoated is the same as for Sika® Permacor®-136 TW.

Sika® Permacor®-136 TW can be used as adhesive for Sikadur-Combiflex® SG-system by adding approx. 4 - 6% by weight of thixotropic agent T. This must be stirred into Sika® Permacor®-136 TW homogeneously. The addition amount is strongly temperature-dependent. Because of the short pot life of Sika® Permacor®-136 TW prepare only the quantities which can be applied in due time.

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APPLICATION INFORMATION

Mixing Ratio		Components A : B
	By weight	100 : 30
	By volume	100 : 43
Consumption	Material consumption on steel	
	Theoretical material-consumption / coverage without loss for medium dry film thickness:	
	Dry film thickness	400 µm
	Wet film thickness	400 µm
	Consumption	~0.54 kg/m ²
	Coverage	~1.85 m ² /kg
	Layer thickness range: At least 300 µm up to max. 800 µm per coat (spraying)	
	Material consumption on concrete	
	<u>A) System with polymer cement concrete (PCC) base coat:</u>	
	Levelling	
	2 x Icoment [®] -540, alternatively	
	1 x SikaTop [®] TW as scratching/levelling mortar	~2 kg/m ² /mm
	1st layer (work well into the substrate)	
	1 x Sika [®] Permacor [®] -136 TW	0.25 - 0.30 kg/m ²
	2nd layer airless sprayed	
	1 x Sika [®] Permacor [®] -136 TW	0.60 - 0.80 kg/m ²
	or 2nd/ 3rd layer manually by brush or roller	
	2 x Sika [®] Permacor [®] -136 TW	0.25 - 0.3 kg/m ² each
	<u>B) System with epoxy base coat:</u>	
	Sika [®] Permacor [®] -136 TW filled with quartz sand and thixotropic agent can be used to prepare the substrate as an alternative to levelling with PCCs.	
	Levelling with Sika[®] Permacor[®]-136 TW up to 2 mm	
	1 x Sika [®] Permacor [®] -136 TW	~1.00 kg/m ² /mm
+ Quartz sand 0.4 - 0.7 mm	~0.25 kg/m ² /mm	
+ Quartz sand 0.1 - 0.3 mm	~0.25 kg/m ² /mm	
+ suspending agent T	~0.03 kg/m ² /mm	
Topcoat airless sprayed		
1 x Sika [®] Permacor [®] -136 TW	0.60 - 0.80 kg/m ²	
Levelling with Sika[®] Permacor[®]-136 TW up to 4 mm		
1 x Sika [®] Permacor [®] -136 TW	~1 kg/m ² /mm	
+ Quartz sand 0.4 - 0.7 mm	~0.50 kg/m ² /mm	
+ suspending agent T	~0.03 kg/m ² /mm	
Topcoat airless sprayed		
1 x Sika [®] Permacor [®] -136 TW	0.60 - 0.80 kg/m ²	
The data for levelling using Sika [®] Permacor [®] -136 TW are approximate values and are influenced by the texture and porosity of the surface as well as the surface roughness.		
Ambient Air Temperature	Min. + 15°C	
Relative Air Humidity	Max. 80 %, surface temperature must be at least 3 K above dew point.	

Surface Temperature	Min. + 15°C	
Substrate Moisture Content	Max. 4 % by volume (CM-measuring)	
Pot Life	At + 20°C	~30 min
	At + 30°C	~15 min
Curing Time	Curing at + 20°C	
	Touch dry after	~14 h
	Walkable after	~24 h
	Mechanically and chemically load-able after	~7 days
Waiting Time / Overcoating	Min. 8 h at + 20°C	
	Max. 72 h at + 20°C	
	The coating surface must be prepared by sweep-blasting in case of a longer waiting time.	
	Coatability	
	With itself, others on enquiry.	
Drying time	Final drying time	
	The following periods should be observed for potable water tanks: 10 to 14 days at a substrate temperature of + 20°C.	
	Sika® Permacor®-136 TW may only come into contact with potable water if it has been ascertained by testing that the coating is cured to the extent that it can not effect the potable water quality.	
	On putting the containers/plant components into operation, the DVGW directives (German Association for Gas and Water) governing cleaning and disinfection as well as the applicable potable water regulations, in particular §11 'List of treatment agents and disinfection procedures', must be observed.	

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

Concrete and cement plaster:

The surface areas to be coated must conform to the building standards and must be capable of bearing loads, firm and free from bond-impairing materials. The average tensile strength according to DIN 1048 should be at least 1.5 N/mm² and must not fall below the lowest individual value of 1.0 N/mm². In the case of high mechanical loads, the average nominal value is 2.0 N/mm² and the lowest individual value 1.5 N/mm². Suitable preliminary coatings compatible with the system are to be used. The respective overcoating times must be observed.

SURFACE PREPARATION

Steel:

Removal of welding sputter, grinding of welding seams and welding seam overlaps in accordance with DIN EN 14879-1.

Blast-clean to surface degree Sa 2 ½ according to ISO 12944, part 4.

Free from dirt, grease and oil.

Average surface roughness R_z ≥ 50 µm

Stainless steel and aluminium:

Cleaning and homogeneous roughening by means of sweep blasting, ISO 12944-4 with non-metallic blasting abrasives.

Average surface roughness R_z ≥ 50 µm.

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MIXING

Stir component A mechanically before mixing. Add components A+B carefully in the prescribed mixing ratio before processing. To prevent splashing or spilling of the liquid, combine the components with a variable-speed electric mixer (stepless regulation) at a low speed for a short period. Then increase the speed to maximum 300 rpm for intensive mixing. The mixing duration is at least 3 minutes and is complete when the two components have combined to form an homogenous mixture. Decant the mixture into a clean container and mix again once more as described above. Wear suitable safety gloves, a rubber apron, a long-sleeved top, work trousers and tightly-fitting safety goggles/face guard when mixing and decanting the products.

Instruction on initial filling

Before filling the coated tanks or pipes for the first time with potable water or foodstuffs, purging or rinsing with water for at least 1 day.

APPLICATION

The specified dry layer thickness is achieved using the airless-spraying process. Achieving a standard layer thickness and even appearance depends on the application process. Spray applications generally produce the best results. If applying with a paintbrush or roller, further application may be required to achieve the necessary coating thickness depending on the design, local conditions and colour. It is good practice before starting the coating application to test a sample area to determine whether the results of the selected application process meet your requirements with the product in question.

Do not thin Sika® Permacor®-136 TW!

Brush or roller:

- Any bubbles should be removed with a flat surface brush
- Several applications (usually 3) are necessary in order to reach the layer thickness of 400 µm
- On a mineral substrate the first coat of Sika® Permacor®-136 TW must be applied manually. Taking care that Sika® Permacor®-136 TW is worked well into the substrate when doing this. This is usually done with a flat surface brush or a paintbrush
- The substrate must be pore-free after the application of the first layer

Airless spraying:

- High performance airless device
- Peak pressure in spray gun at least 180 bar
- Remove sieves. Direct suction (without suction hose)
- Nozzle size 0.48 - 0.58 mm
- Spraying angle e.g. 50°
- Spray hoses ¾", max. 20 m, from spray gun ¼" approx. 2 m
- Material temperature at least + 20°C
- At low temperatures we recommend the insulation of the spray hose as well as the use of a continuous flow heater, particularly in case of long spray hoses

Repair:

- Clean flaws or damaged areas, grind or sweep-blast overlapping areas to a matt finish and clean off all traces of dust
- Overcoat immediately afterwards

CLEANING OF EQUIPMENT

SikaCor® Cleaner

BASIS OF PRODUCT DATA

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

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for the exact product data and uses.

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. Further notes and information data sheets on product safety and disposal can be found on the Internet at www.sika.de.

GISCODE: RE 1

This coding enables additional information and help with the creation of operating instructions (WINGIS online) to be obtained on the BG Bau service pages (www.gisbau.de).

Skin contact with epoxy resins can lead to allergies!
Avoid direct skin contact at all costs when handling epoxy resins!

For the selection of suitable protective equipment, we have made our information data sheets 7510 'General notes on occupational safety' and 7511 'General notes for wearing protective gloves' available at www.sika.de. In conjunction with this we also recommend the BG Bau service pages for information regarding the handling of epoxy resins (www.bgbau.de/gisbau/fachthemen/epoxi).

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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