

PRODUCT DATA SHEET

Sika® Permacor®-136 TW

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

PRODUCT 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 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 water supply schemes as well as in the food and beverage industry.

PROPERTIES

- 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
- Testable for pores on metal surfaces

TESTS

APPROVAL / STANDARDS

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) worksheet W 270 (growth of microorganisms in potable water).

Physiologically harmless (expert evidence by the Nehring institute).

Monitored by KIWA NL in accordance with BRL-K 759 as a certified coating for contact with potable water.

PRODUCT DATA

COLOUR SHADES	Blue, beige, red brown	
FINISH	Glossy	
PACKAGING	Sika Permacor-136 TW:	13 kg and 6.5 kg net.
	SikaCor Cleaner:	25 l; 160 l
SHELF LIFE	In originally sealed containers in a cool and dry environment: min. 2 years.	

SYSTEMS

COATING SYSTEMS

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 Sika Top 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 before commencing coating with Sika Permacor-136 TW, the moisture level in the substrate should be $\leq 4\%$, measured 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 moisture level in the substrate must be $\leq 4\%$, measured with the CM device.

The waiting time until the levelling mortar can be reworked 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 to be stirred homogeneously into Sika Permacor-136 TW. The amount to be added is strongly temperature-dependent.

Only mix the quantities which are to be applied shortly.

SURFACE PREPARATION

Steel:

Removal of welding spatter, 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 EN ISO 12944, part 4. Free from dirt, grease and oil. Average surface roughness $R_z \geq 50 \mu\text{m}$

Stainless steel and aluminium:

Cleaning and homogeneous roughening by means of sweep blasting, DIN EN ISO 12944-4 with non-metallic blasting abrasives. Average surface roughness $R_z \geq 50 \mu\text{m}$.

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/mm^2 and must not fall below the lowest individual value of 1.0 N/mm^2 . In the case of high mechanical loads, the average nominal value is 2.0 N/mm^2 and the lowest individual value 1.5 N/mm^2 . Suitable preliminary coatings compatible with the system are to be used.

The respective overcoating times must be adhered to.

TECHNICAL DATA

MATERIAL CONSUMPTION ON STEEL

Product	Density when liquid approx. kg/L	Solids content approx. %		Theoretical material consumption/theoretical yield without loss for average dry layer thickness of			
		by vol.	by weight	dry microns	wet microns	approx. kg/m ²	approx. m ² /kg
Sika Permacor-136 TW	1.35	100	100	400	400	0.54	1.85

Layer thickness range: At least $300 \mu\text{m}$ up to max. $800 \mu\text{m}$ per coat (spraying)

MATERIAL CONSUMPTION ON CONCRETE

System	Product	Consumption
Levelling	2 x Icoment 540 alternatively 1 x Sika Top TW as scratch filler	approx. $2 \text{ kg/m}^2/\text{mm}$
1 st layer (work in well)	1 x Sika Permacor-136 TW	$0.25 - 0.30 \text{ kg/m}^2$
2 nd layer sprayed or 2 nd / 3 rd layer by hand	1 x Sika Permacor-136 TW 2 x Sika Permacor-136 TW	$0.60 - 0.80 \text{ kg/m}^2$ $0.25 - 0.3 \text{ kg/m}^2$ each

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.

System	Product	Consumption
Levelling with Sika Permacor-136 TW up to 2 mm	1 x Sika Permacor-136 TW + Quartz sand 0.4 - 0.7 mm + Quartz sand 0.1 - 0.3 mm + suspending agent T	approx. $1 \text{ kg/m}^2/\text{mm}$ approx. $0.25 \text{ kg/m}^2/\text{mm}$ approx. $0.25 \text{ kg/m}^2/\text{mm}$ approx. $0.03 \text{ kg/m}^2/\text{mm}$
Topcoat airless sprayed	1 x Sika Permacor-136 TW	$0.60 - 0.80 \text{ kg/m}^2$

MATERIAL CONSUMPTION ON CONCRETE (Continuation)

System	Product	Consumption
Levelling with Sika Permacor-136 TW up to 4 mm	1 x Sika Permacor-136 TW + Quartz sand 0.4 - 0.7 mm + suspending agent T	approx. 1 kg/m ² /mm approx. 0.50 kg/m ² /mm approx. 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.

MIXING RATIO

(COMPONENTS A : B)

By weight 100 : 30

By volume 100 : 43

RESISTANCE

CHEMICAL RESISTANCE

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

TEMPERATURE RESISTANCE

Dry heat up to approx. +100 °C

HINTS OF APPLICATION

PREPARATION OF MATERIAL

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.

APPLICATION METHOD

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.

Sika Permacor-136 TW must not be diluted!

Paintbrush or roller:

Any bubbles should be removed with a 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 by hand. Care must be taken that Sika Permacor-136 TW is worked well into the substrate when doing this.

This is usually done with a surface brush or a paintbrush.

The substrate must be free of pores after the application of the first layer.

APPLICATION METHOD (Continuation)	<p><u>Airless spraying:</u> High performance airless device. Peak pressure in spray gun at least 180 bar Remove sieves. Direct suction (without suction hose). Spray nozzle: 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</p> <p>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.</p> <p><u>Repair:</u> Clean flawed or damaged points, grind or sweep-blast overlapping areas to a matt finish and clean off all traces of dust. Overcoat immediately afterwards.</p>	
APPLICATION CONDITIONS	Air and surface temperature at least + 15°C Max. humidity: 80%, surface temperature must be at least 3 K above dew point.	
SUBSTRATE HUMIDITY (CONCRETE)	Max. 4% (CM-measuring)	
POTLIFE	Approx. 30 min. at + 20°C Approx. 15 min. at + 30°C	
CURING AT 20°C	Touch dry: Walkable: Mechanically and chemically loadable:	After approx. 14 hours After approx. 24 hours After approx. 7 days
WAITING TIME BETWEEN COATS	Min.: 8 h (20° C) Max.: 72 h (20° C) The coating surface must be prepared by sweep-blasting in case of a longer waiting time.	
COATABILITY	With itself, others on enquiry.	
FINAL DRYING TIME	The following periods should be adhered to 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 no longer impair the potable water. 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 obeyed.	
INSTRUCTION FOR INITIAL FILLING	Before filling the coated tanks or pipes for the first time with potable water or foodstuffs, steep in water or rinse for at least 1 day.	
CLEANING OF EQUIPMENT	SikaCor Cleaner	

IMPORTANT NOTICE

CE-MARKING DIN EN 1504-2

The harmonized European Standard EN 1504-2 “Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality, control and evaluation of conformity – Part 2: Surface protection systems for concrete gives specifications for products and systems based on methods “hydrophobic impregnation”, “impregnation” and “coating”. Products acc. EN 1504-2 used as flooring systems with mechanical loads also must fulfill EN 13813.

Further details to CE-marking can be obtained from the technical document ‘Sika Produkte und Systeme nach DIN EN 1504-2’.

VALUE BASE

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.

LOCAL RESTRICTIONS

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

HEALTH AND SAFETY INFORMATION

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.gisbau.de/service/epoxi/epoxi.htm).

Information on the safe handling of chemical products, as well as the essential physical, safety-related, toxicological and ecological data can be found in the current safety data sheets. Observe all relevant regulations, e.g. the hazardous substances act. Further notes and information data sheets on product safety and disposal can be found on the Internet at www.sika.de.

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. The most recent product data sheet applies. This can be requested from us or is available to download at www.sika.de. Please check availability of local product data sheet at your local website. In cases of doubt the German text is valid.

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