

PRODUCT DATA SHEET

SikaFill®-300 Thermic

Thermal insulation and waterproofing for roofs and terraces that contribute to the reduction of temperature and condensation.

DESCRIPTION

Flexible liquid membrane with microspheres that favor thermal insulation contributing to the reduction of temperature and condensation, with the ability to bridge cracks up to 0.7mm. External certification **Paslink Cell Test**.

USES

- As a thermal insulator that contributes to the reduction of temperature and condensation. It can reduce the temperature up to 20% (1)
- Waterproofing of covers on different types of supports:
 - Concrete
 - Mortar
 - Fiber cement tile
 - Brick Zinc tile
- As protection in asphalt waterproofing and waterproofing in polyurethanes
- Side walls in party walls

(1) These values are an approximation that can vary depending on the type of surface and the actual conditions and their use can vary considerably, this estimate is only indicative and the actual temperature reduction could be shorter or extend beyond what was previously stated.

CHARACTERISTICS / ADVANTAGES

- Reduction of temperature and condensation because it is a product based on a new technology with polymeric microspheres.
- Material with low thermal conductivity and high reflectivity of solar radiation .
- The ability to bridge cracks up to 0.7 mm .
- Excellent impermeability to rainwater or condensation.
- Resistant to weathering and UV rays.
- Easy cold application.
- Excellent coverage applied in the recommended amounts.
- Low intensity so it generates lower product consumption compared to other waterproofing systems (acrylics, asphalts and polyurethanes)
- Easy maintenance.

APPROVALS / CERTIFICATES

Classification USGB LEED, **SikaFill®-300 Thermic** conforms to the requirements LEED EQ, credit 4.2: Low emission materials Paints & coatings VOC <100 g / l

PRODUCT INFORMATION

Packaging	Jar 3.1 Kg Plastic baking: 18 kg Drum: 180 kg
Colour	White, grey, red and green.
Shelf life	18 months in the original container.
Storage conditions	18 months in its original packaging, tightly closed in a cool place and indoors. Transport with normal precautions for chemical products

Density	0.90 ± 0.02 g/ml approx.	
Solid content by volume	60 ± 2%	
Viscosity	28000 - 32000 cPs	
Tensile resistance	1 Mpa	
Tensile strain at break	100 %	
Drying time	Touch-dry time	2 hours (20°C and 65% HR)
	Drying time between layers	3 - 5 hours (20°C and 65% HR)
	Final drying time	24 hours.

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

- The air temperature must be between + 5C and + 35 ° C and must be descending.
- If applied at rising temperatures, bubbles may appear due to air expansion.
- Atmospheric humidity must be less than 80%
- The ambient temperature during application must be at least + 3 ° C above the dew point.
- Pay attention to temperature changes and direct sunlight, as they may affect the application.
- Make sure there is no rain forecast for the next 24 hours.
- Protect the product from rain for at least 8 hours (at 20 ° C) after application.
- The surface must be dry and the humidity of the support must be <4% without rising humidity.
- The product should not be used when there is permanent or continuous traffic of people (only for pedestrian or occasional traffic - maintenance personnel)
- Do not apply cementitious products directly on the SikaFill®-300 Thermic in case of hard finish insulate with a high density polyethylene or with a geotextile. Keep out of the reach of children Add potable water to the product only for priming.
- The tools must be washed with water immediately after they are used, once they have been cleaned by mechanical means.
- **SikaFill®-300 Thermic** should not be used in places where it is in permanent contact with water, either by storage, impoundment or condensation.
- Do not place any type of sharps on the waterproofing.
- To maintain the color and achieve the expected durability the product should be applied according to the indicated.
- **SikaFill®-300 Thermic** has an approximate durability of 12 years, with preventive maintenance at 6 years, and with periodic inspections according to the recommendation of the technical sheet.

- This estimate is based on our current knowledge of SikaFill®-300 Thermic, under appropriate conditions of application and maintenance.
- However, due to the fact that the actual conditions and their employment can vary considerably, this estimate is only indicative and the actual life span could be shorter or longer than what was previously reported.
- The conditions of the substrates must comply with the requirements prior to the application of the **SikaFill®-300 Thermic** and must comply with the construction standards in force in Colombia.

ECOLOGY, HEALTH AND SAFETY

Keep out of reach of children. Use rubber gloves and glasses for handling. Consult the product safety sheet.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

The surface must be dry, healthy and clean, free of dust, cement or mortar slurries, grease or material that prevents the adhesion of the product (on substrates, cementitious it is convenient to remove by mechanical means the surface layer when these situations arise)

The substrate must have the proper slope and be without depressions that result in prolonged or permanent water immersions. The surface humidity should be less than 4% before applying the product. To verify if the product can be applied, it is recommended to place a 50 cm x 50 cm plastic sealed perimetally with an adhesive tape, at 16 hours observe the humidity condensed under the plastic, if this equals an area greater than 4% of the total plastic area, **SikaFill®-300 Thermic** system can not be applied directly. (ASTM D 4263-12, method of plastic sheet to measure moisture in concrete). The temperature of the surface and of the air must be between + 5 ° C and 35 ° C, it is not recommended to apply in the hours of greater heating of the surface due to solar radiation. Degassing is a natural phenomenon of concrete that can produce bubbles in the following product layers applied. The moisture content, the air trapped in the concrete and the surface finish must be carefully checked before beginning any application work. The installation of the membrane when the temperature is descending or stable can reduce the degassing. Therefore, it is generally better to apply the embedded layer

in the evening or at night. Print the support and place the reinforced system at all times.
Any additional clarification consult with our Technical Department.

APPLICATION

SikaFill®-300 Thermic can bridge existing inactive cracks (without movement) up to 0.7 mm wide. Expansion joints, construction and fissures with movement or exceeding the bridging limits of the product, must be sealed with a material such as **Sikaflex-Construction +**. The procedure consists of opening the crack with a polisher and cutting disc, removing the dust and drying the substrate very well before applying the sealant. The appearance of new fissures in the concrete and the mortar can break the waterproofing. For this reason it is essential to use **Sikafelt FPP-30** reinforcement especially in new works or in areas greater than 10 m².

The causes of cracks in cementitious materials such as concrete and mortar are:

- The shrinkage by drying, which is the change of volume of the material during the drying process.
- This process can last for 10 years or more, and has a greater impact on the fissuring phenomenon in the first months after the mortar or mortar is placed.
- The contraction by temperature, which is the change in volume of the material due to changes in the temperature of the environment.
- Deflections caused by live or dead charges.
- The settlements of the soil.

To prevent or reduce the number and size of fissures, consider the following:

- Prepare concrete mortars with low cement water ratios
- Use macro and micro fibers in concrete and mortar.
- Design expansion joints on roofs and facades.
- Design adequate thicknesses of roof plates to minimize deflections (see the Colombian Resisting Earthquake Standard)
- Wait at least 28 days after finishing the concrete or mortar, to install the **SikaFill®-300 Thermic**
- Carry out an adequate curing during the first seven days (curing guide ACI 308).

Note: Be careful when installing the **Sikafelt FPP-30** reinforcement fabric that is fully adhered to the surface. Make repairs with the improved mortars with **SikaLátex** or **Sika Viscobond**.

To waterproof covers.

- On concrete

Primer:

Dilute the **SikaFill®-300 Thermic** product between 15% and 20% of potable water in volume and apply with roller, broom or brush on the surface, ensuring that it penetrates well in all the porosities of the substrate,

cracks and cracks.

Coating:

Apply the pure product in one or two layers, guaranteeing a maximum consumption of 0.3 Kg / m per layer. When the first coat is cool, install the **Sikafelt FPP-30** reinforcement. The product should be applied without pressing the roller or brush against the surface to allow the amount of product required per layer to be applied. Allow to dry completely between layers (Approx 3 hours at 20 ° C and 65% relative humidity), apply two additional layers each of 0.3 Kg / m. This waterproofing with a polyethylene, geotextile or similar, and place new mortar of 3 cm and a hard finish.

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- Coating over existing systems (asphalt or polyurethane)

In cases where **SikaFill®-300 Thermic** is used as a finish, only better performance of the existing system will be achieved in terms of UV resistance, service life extension and / or energy efficiency. If the existing impermeable system is not in good condition, it must be removed and **SikaFill®-300 Thermic** used as a complete system to waterproof covers.

Coating:

SikaFill®-300 Thermic can be used as a cover coating to achieve a UV-stable layer, to extend the service life of existing roofs or as a reflective lining to improve energy efficiency.

Apply **SikaFill®-300 Thermic** in one or more layers with a total consumption $\geq 0,9 \text{ kg/m}^2$, maximum $0,3 \text{ kg/m}^2$ /layer. The first layer should be allowed to cure before applying the next.

Note: Make sure that the existing system is firmly attached or mechanically fixed to the support. Bituminous coatings should not be sticky or with loose parts, volatile coatings or old asphalt coatings. Print and use a fully reinforced system.

- **On other supports.**

On Zinc Tile:

The zinc tile must be resistant. The exposed surfaces must be prepared until a white metal surface is left. Use localized reinforcements on the joints and fixings

On wooden supports:

The wooden supports and wooden panels must be in good condition, firmly attached or mechanically fixed.

About Brick and stone:

The mortar joints must be resistant and preferably a cleaning will be carried out. Use localized reinforcement on the joints and print before **SikaFill®-300 Thermic** application. The surface must be free of dust or particulate material

About Paints / coatings:

Make sure the existing material is strong and firmly attached. Remove any remaining rust and use localized reinforcements on the joints.

<u>Support</u>	<u>Pre-treatment</u>
Ggalvanized metal, aluminum, copper, stainless steel.	Mechanically sanding
Brick and stone	Not necessary
Glass fiber reinforced plastics (GRP), fiberglass (GRP)	Not necessary
Cement supports	Mechanically sanding
Paints/ Coatings	Mechanically sanding
Tile and slates	Mechanically sanding (vitrified tile)
Bituminous membranes	Mechanical cleaning
Wooen supports	Mechanically sanding

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Consumption and durability

These consumptions are a theoretical approximation that can vary depending on the type of substrate, the roughness of the surface and the methods of application.

Stage of the system	Reinforced system on concrete	Zinc coating
	Consumption Kg/m ² *	Consumption Kg/m ² *
Primer	0.2	
Firts Layer	0.3	0.3
Ref. Sikafelt FPP-30		
Second Layer	0.3	0.3
Third Layer	0.3	0.3
Total	1.1	0.9

Note: Applying these consumptions of the table ensures a dry film of 0.6 mm thickness (for reinforced system on concrete) This waterproofing system has an approximate durability of 12 years with preventive maintenance every 6 years. To achieve the expected performance of the product, consider the following:

System	Approx. Durability	Preventive Maintenance	Periodic inspection
SikaFill®-300 Thermic reinforced	17 years	6 years	3 months

Preventive Maintenance:

This maintenance consists of applying an additional layer of Sika to renew the waterproofing system and extend its durability. To carry out the maintenance, an adequate cleaning must be carried out, in which all the substances that impede the durability of the product, such as dust, grease, etc., are eliminated. It is necessary to repair the areas of product that are damaged by punching, cracking of the substrate, faults by adhesion (by dalla of the substrate) or blistering of the waterproof film (by water immersion). The cracks that are identified must be marked with **Sikaflex-Construction +**.

Periodics inspections.

It is recommended to perform periodic inspections every 3 months, which consitute in the visual review of the roof system, to verify its status and perform cleaning activities and punctual repairs if required :

1. Verify the integrity of the waterproof film and repair it punctually in the areas where breakages, failure due to adhesion, puncture, tearing, blistering or cracking are identified, caused by traffic, impoundment, etc.
2. Clean the cover to remove short-pointed elements such as stones, glass, screws, nails, wooden sticks, metal rods, etc. That can cause breakage to the waterproof system.

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3. Check and clean the siphons to avoid plugging and therefore rain water impoverishment.
4. Identify areas with temporary or continuous water impoundments and repair them if necessary, applying additional layers of product.

Note: It is important to keep in mind that the greater the film thickness of the application, the longer the life of the waterproofing.

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

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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