

# AKSID

CONSULTANCY



## ROOFING SOLUTION



**AKSID**  
BUILDING THE NATION





# AKSID ENGINEERING DEPARTMENT

**AKSID Corporation Limited**, an industry leader in construction, is headquartered in Dhaka, Bangladesh and has been developing the construction sector for over 10 years. Our adaptable, professional teams bring added value to our clients' businesses through our expertise and knowledge.

## Highlights:

200+ Employees.

Country Distributor of Sika, World's Largest Construction Chemical Company.

Handling Infrastructure and Mega Projects all over Bangladesh.

Clients include Japanese, Thai, Russian, Korean and the largest groups of companies of Bangladesh.

AKSID provides construction solutions and services to all types - large scale infrastructure to industrial developments to local level construction at site. We have professional skilled manpower, tools, and solutions to help all levels of construction all over Bangladesh.

AKSID is the Country Distributor of Sika, a Switzerland based construction chemical company and the largest manufacturer of construction chemicals. Sika is world renowned and has been producing construction solutions since 1912. Through a successful partnership through Sika, AKSID has grown to be the largest supplier of construction chemicals in the entire country.

# OUR VALUABLE CLIENTS





## WHAT IS ROOF WATERPROOFING SOLUTION

Roof is the most externally exposed surface of any structure which faces harsh weather conditions. Over time, cracks are developed in rooftop due to thermal expansion. Water creeps in through these cracks and spread out inside the structure, ruining the aesthetic appeal and weakening the structural strength. This is why waterproofing of roof is must over a certain period. Though, waterproofing during roof construction is the best attempt to protect the structure. There are two types of roofing solution System -

*a. Exposed System*

*b. Non-Exposed System*

## BENEFITS OF ROOF WATERPROOFING

- ▲ Water absorption can be decreased.
- ▲ Prevents the formation of cracks on the concrete roof floor.
- ▲ The appliance is easy.
- ▲ It will increase the lifetime of a solid construction.
- ▲ It prevents corrosion of reinforcement.
- ▲ Also, prevents dampness inside the building.
- ▲ It prevents seepages from the ceiling.
- ▲ This reduces the maintenance cost of the building.
- ▲ The property value can be increased.
- ▲ It supplies a healthy environment; good waterproofing system helps in making a clear living workspace.
- ▲ It protects the property as well as the people present therein

# At a Glance

01 - 04 •



## Sika® CoolCoat

Single Component, Acrylic Based,  
Flexible, Micro Fibre Reinforced  
Waterproofing And Heat  
Reflective Coating System.



• 05 - 07



## SikaTop® Seal-109 hi

Polymer-modified, Flexible, Cementitious  
Waterproofing Coating

## EXPOSED SYSTEM

# SIKA® COOLCOAT

Single Component, Acrylic Based, Flexible, Micro Fibre Reinforced, Waterproofing, Heat Reflecting Cum Temperature Reducing Coating System.

Sika® CoolCoat is a flexible, liquid applied, single component, UV and weather resistant, acrylic waterproofing membrane for all types of exposed roof slabs (new and old), terraces (sloped and flat), etc. The high Solar Reflective Index of the membrane serves as a heat reflective surface and reduces heat ingress keeping the interior of the building cooler

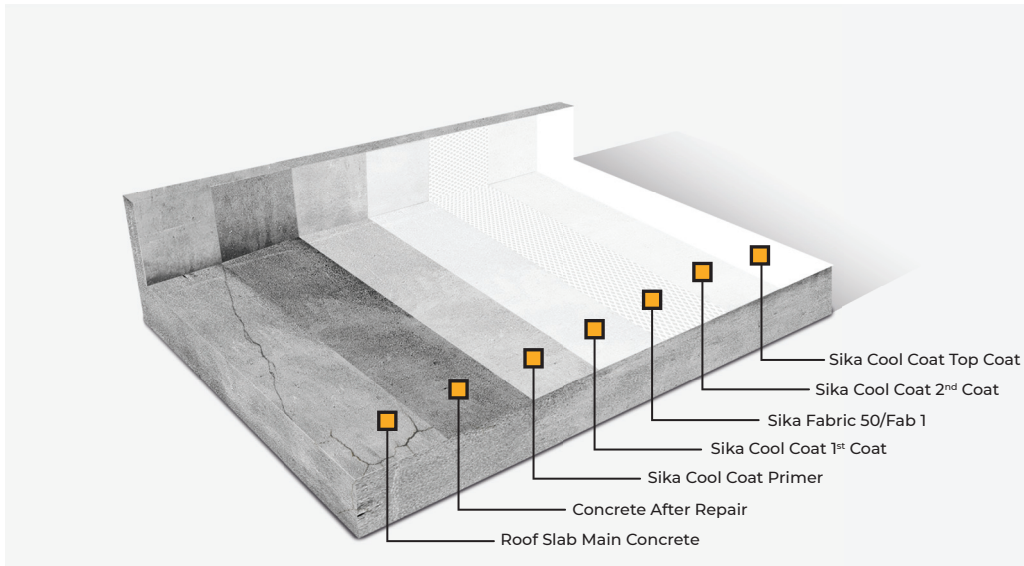


## WORKABLE AREAS

- ▲ Roof slabs (flat and sloped).
- ▲ RCC/asbestos/lime terraced roofs/clay tiles etc.
- ▲ Sunshades.
- ▲ Exterior coating for PVC water tanks exposed to direct sunlight to keep the inside water temperature relatively cooler.
- ▲ External walls and balconies.

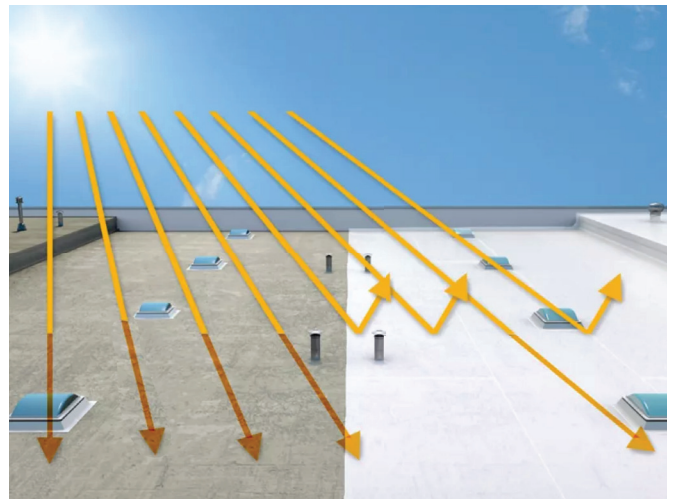
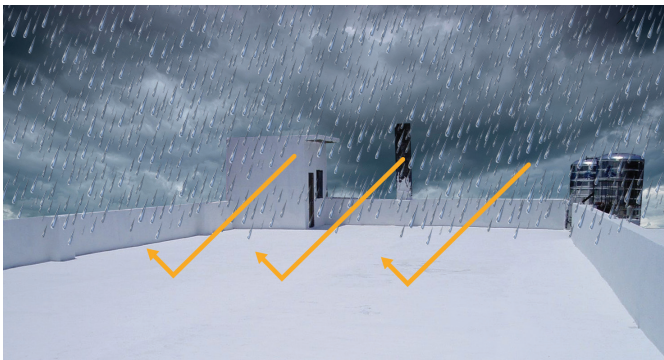


## DIAGRAM



## ADVANTAGES

- ▲ Protects concrete against water penetration.
- ▲ Cross linking polymer gives excellent weather resistance and enhances service life.
- ▲ High solar reflectance index (SRI) indicates high degree of cooling effect.
- ▲ Crack-bridging.
- ▲ High resistance to chloride penetration, hence highly suitable for saline environment.
- ▲ Algae and fungi resistant.
- ▲ Highly flexible and Vapour permeable.
- ▲ Simple and fast application.
- ▲ Excellent adhesion to concrete, brickwork, corrugated asbestos, bitumen, asbestos cement sheet and metal decks.
- ▲ Ultra violet rays and weather resistant.
- ▲ Water based hence eco friendly.



# TECHNICAL INFORMATION

Approvals/Certificates

Conforms to: IS101, IS 2645, EN 1542, ASTM D 5589, ASTM D 5590, ASTM C 1202-08, ASTM D 4587, ASTM C 836, ASTM E1980, EN-673, EN-410

## Packaging

Description	Packaging
Sika® CoolCoat	Liquid polymer & additive
Sika® CoolCoat Primer	5 kg Container

**Composition** Acrylic polymer dispersion

**Color** White

**Density** ~ 1.35 kg/l @ 27°C

**Solid content by weight** ~ 66%

## System Structure

### For Roof without Sika® Fabric-50

Coat	Product	Consumption
Primer Coat	Sika® CoolCoat Primer	0.2-0.3 kg/m <sup>2</sup>
First Coat	Sika® CoolCoat	0.75 kg/m <sup>2</sup>
Second Coat	Sika® CoolCoat	0.75 kg/m <sup>2</sup>
Top Coat	Sika® CoolCoat Primer	0.05-0.08 kg/m <sup>2</sup>

### For Roof with Sika® Fabric-50

Coat	Product	Consumption
Primer Coat	Sika® CoolCoat Primer	0.2-0.3 kg/m <sup>2</sup>
First Coat	Sika® CoolCoat	0.75 kg/m <sup>2</sup>
Fabric Reinforcement	Sika® Fabric-50	1 m <sup>2</sup> /m <sup>2</sup>
Second Coat	Sika® CoolCoat	0.75 kg/m <sup>2</sup>
Top Coat	Sika® CoolCoat Primer	0.05-0.08 kg/m <sup>2</sup>

## Waiting Time

Sika® CoolCoat Primer: ~ 2-4 hours at +27°C (depending on humidity and ventilation)

Sika® CoolCoat Coating: ~ 6 – 8 hrs at +27°C (depending on humidity and ventilation)

## Layer Thickness

~ 1.0 mm without Sika® Fabric-50

~ 1.2 mm with Sika® Fabric-50



<b>Tensile Strength</b>	1.5 MPa (ASTM D 412)
<b>Elongation at Break</b>	> 200% (ASTM D 412)
<b>Adhesion in Peel</b>	> 1.5 MPa (on Concrete substrate) (EN 1542)
<b>Crack Bridging Ability</b>	Passes upto 3.2 mm width (ASTM C 1305)
<b>Permeability to Water Vapour</b>	Passes (IS 2645)
<b>Water Vapour Transmission</b>	~ 23 g/m <sup>2</sup> / 24 hr (ASTM E 96)
<b>Water Absorption</b>	< 10% (by Mass) (ASTM D 570)
<b>Behaviour after Artificial Weathering</b>	No defect upto 500 hours exposure (ASTM D 4587)
<b>Microbiological Resistance</b>	No Algae & Fungal Growth (ASTM D 5590)
<b>Solar Reflectance Index</b>	102 (ASTM E 1980)

## APPLICATION INFORMATION

Ambient Air Temperature: +10°C min/ +45°C max

Substrate Temperature: +10°C min/ +45°C max

### Application

Sika® CoolCoat is supplied in a single component pack and is in ready to use form. Stir thoroughly using a conventional paint stirrer prior to application. As a part of the System please prime the substrate with Sika® CoolCoat Primer. Within 2-4 hours of priming, apply 1st coat of Sika® CoolCoat by brush or roller. Do not spoil the dry surface while walking on it for application. Place Sika® Fabric-50 over the first coat when it is in tacky condition. Apply the 2nd coat of Sika® CoolCoat following the same above procedure at suitable time interval of 6-8 hours between the coats. Finally apply a thin layer of Sika® CoolCoat Primer. Suitable time interval is 6-8 hours after the second coat dries off. The above-mentioned times may vary depending on temperature, humidity and ventilation at site.



# NON-EXPOSED SYSTEM

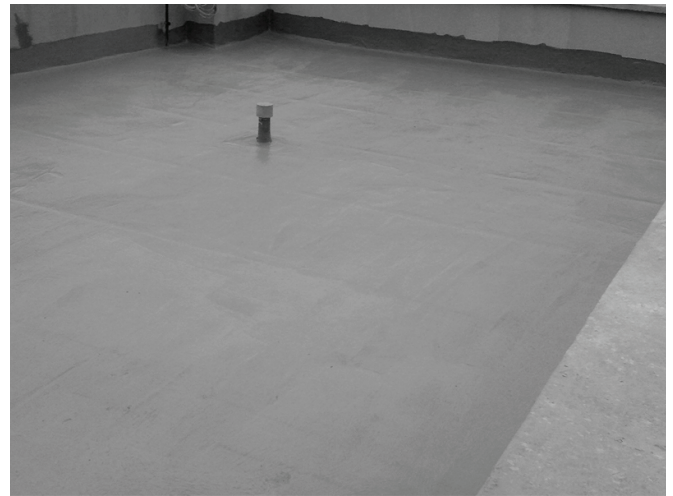
## SIKATOP® SEAL-109 HI

Polymer-modified, Flexible, Cementitious Waterproofing Coating

SikaTop® Seal-109 hi is a cementitious, two-part, polymer-modified flexible waterproofing coating. It is applied to concrete and mortar to prevent water infiltration.

### WORKABLE AREAS

- ▲ Water Tanks
- ▲ Basements
- ▲ Car Parks
- ▲ Terraces
- ▲ Balconies
- ▲ Bridges
- ▲ Retaining Walls
- ▲ Swimming Pools
- ▲ RC Gutters
- ▲ Bathroom Floors And Walls
- ▲ Planter Boxes
- ▲ Kitchens
- ▲ Waste Water Treatment Plants
- ▲ Shower Rooms
- ▲ Laundries



## ADVANTAGES

- ▲ Crack-bridging & Elastic
- ▲ Good Impermeability against water ingress
- ▲ Highly water resistant, arrest salt petre and prevent carbonation
- ▲ Extremely good bonding with high abrasion resistance
- ▲ Simple application and fast curing
- ▲ Excellent adhesion to concrete, brickwork and corrugated asbestos cement sheets
- ▲ Non-toxic, same as cement

## TECHNICAL INFORMATION

Approvals/Certificates

Conforms to IS 101, IS 2645, ASTM D 2370, EN 1348 etc.

	Part A	Part B
<b>Composition</b>	Acrylic Co-polymer	Specially graded cementitious powder
<b>Packaging</b> (25 kg System)	10.0 kg container	15.0 kg bag
<b>Color</b>	White Liquid	Grey Powder

**Mixed Product Color** RAL 7037 (Dusty Grey)

**Density** ~1.6 kg/liter (mixed density of A+B) at 27°C

**Mixing Ratio** Part A:Part B=1:1.5 (by weight)

### System Structure

Coat	Product	Consumption
Base Coat	SikaTop® Seal-109 Hi	~ 1 kg/m <sup>2</sup>
Fabric Reinforcement	Sika® Fabric-50	1 m <sup>2</sup> /m <sup>2</sup>
Top Coat	SikaTop® Seal-109 Hi	~ 1.2 kg/m <sup>2</sup>

**Layer Thickness** 1.5 mm with Sika® Fabric-50

**Waiting Time** The waiting time between consecutive coats is ~2 - 6 hours (at +30°C)

**Tensile Strength** 2 N/mm<sup>2</sup> after 28 days (with Sika® Fabric-50) (ASTM D 2370)

### Elongation at Break (ASTM D 2370)

~ 35% without Sika® Fabric-50

~ 20% with Sika® Fabric-50

### Tensile Adhesion Strength

~ 2 N/mm<sup>2</sup> (Concrete Failure) (ISO 4624)

### Behaviour after Artificial Weathering

No Chalking or Cracking on the film when tested for 500 hours (IS 101)

# APPLICATION INFORMATION

**Ambient Air Temperature** +10°C min. / +40°C max.

**Substrate Temperature** +10°C min. / +40°C max.

**Pot Life** ~ 30 min at 27 °C (Mixed Material)

## Mixing

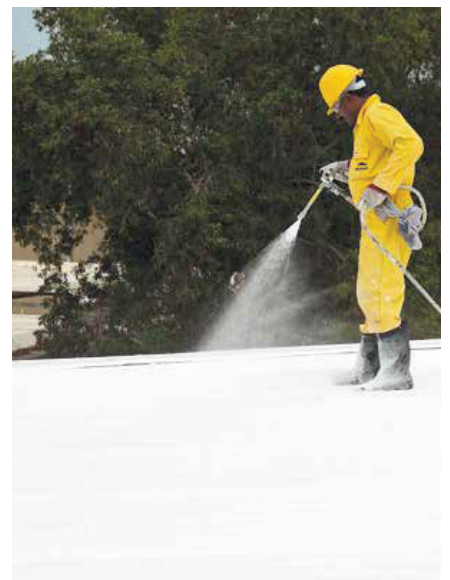
Used as slurry Part A : Part B = 1: 1.5 (by weight). The consistency of the mix can be altered by reducing the amount of Component A (liquid) to be used . Under normal circumstances, when the full quantities of both components are mixed together, a slurry consistency will result. For trowellable consistency use only 90% of component A. Mix in a clean container by slowly adding the powder component to the liquid component and stirring with slow speed mixer (500-600 rpm). Mix for 3 minutes until free from lumps.

## Application

Dampen all the surfaces immediately ahead of SikaTop® Seal-109 hi application. While the surface is still damp from saturation, apply the first coat and leave to harden for 2 to 6 hrs. For slurry consistency apply with a hard bristled brush or broom. For trowellable mortars use a notched trowel. After the second coat has been applied, finish by rubbing down with a soft, dry sponge.

## As a Slurry

Apply the mixed SikaTop® Seal-109 hi mechanically, by spray or by hand using a stiff brush, applied in the same direction. In case the coating is to be reinforced with glass fabric, lay the Sika® Fab-1 into the freshly applied base coat and embed firmly into the wet coat with brush. Apply the second coat of SikaTop® Seal-109 hi, applied by brush in crosswise direction to the first application as soon as first coat has hardened.



# FAQ'S

## **What is the purpose of roof waterproofing?**

Your terrace or roof is the most externally exposed area which faces harsh weather conditions. This includes not only heavy rains but also scorching summers and shivering winters. Such climatic changes usually lead to thermal expansions in the ceiling of your home and may cause water seepage. Surface weakened over time ultimately results in more damage. This is why you need to apply waterproofing solutions over a certain period.

## **Should I waterproof my roof at the time of construction or resolve the problem post construction?**

Waterproof during construction is the best! You won't have to face any leakage issues and hassles after construction. It just helps save time & money. Waterproofing works as an insurance protection for your valued assets.

## **How long the roof waterproof solutions last for?**

Usually, any waterproofing solution comes with a guarantee of 10 to 15 years; however, it is subject to the method of applying it and the proportion of the elements. If you follow the steps wisely, you don't need to re-waterproof even beyond this range.

## **Is roof waterproofing solution expensive?**

Roof waterproofing is not as pricey as you think. The initial project cost may make thing that it is not worth it, but the long-term payoff makes it all worth it. Prevention is always better and cheaper than cure.

# OUR OTHER SOLUTIONS



Concrete Repair



Concrete Injection



Grinding & Polishing



Grouting



PU Flooring



Industrial Flooring



Waterproofing