

# WATERPROOFING

## SikaProof® FULLY-BONDED MEMBRANE SYSTEMS FOR WATERTIGHT BASEMENTS

TECHNOLOGY AND SYSTEMS

# SikaProof® – THE HIGHLY-FLEXIBLE AND FULLY- BONDED FPO MEMBRANE SYSTEM

**BASEMENTS AND OTHER BELOW-GROUND STRUCTURES** that are exposed to aggressive ground conditions and stress, or spaces requiring a completely dry internal environment, demand reliable, high-performance waterproofing solutions. The function of the waterproofing should also be engineered to include protection of the concrete structure itself against potentially harmful influences of aggressive natural mediums and gases in soil, groundwater or seawater.

Sika provides unique, fully-bonded, highly-flexible FPO membrane systems that can easily meet all of the stringent requirements as well as safely accommodating the project's needs – to create and keep new and existing basement structures durably and securely watertight. Nowadays basements and other below-ground structures have to accommodate more and more demanding performance specifications, from living and leisure areas for residential buildings, to technical facilities, services and sensitive storage areas in commercial buildings. Thanks to its simple, fast and secure application the SikaProof®-A and -P systems are increasingly being chosen for new structures as well as renovations of existing basements.

SikaProof® membrane systems provide this high level of waterproofing due to their fully-bonded nature. Not only is the concrete structure protected, the innovative grid sealant system of the SikaProof®-A membrane bonds together with the concrete to prevent lateral water underflow and migration between the concrete structure and the membrane system, in the event of any damage.

The highly-reliable, durable and waterproofing performance achieved with the SikaProof® systems, combined with worldwide experience gained over more than 45 years, gives basement owners, specifiers and contractors the highest level of confidence in achieving their objectives.



# TYPICAL APPLICATIONS

**SikaProof®-A AND -P SYSTEMS** can be used for new structures, renovating existing basements and a variety of more and more demanding applications, whether you want to keep water in or keep water out.



**NEW BASEMENT STRUCTURES**  
Structural waterproofing requirements for commercial or residential buildings are becoming more demanding. The unique fully-bonded SikaProof®-A and -P systems provide a durable, long-lasting and cost-effective solution.



**RENOVATION WORK ON EXISTING STRUCTURES**  
'TANK IN A TANK' refurbishment of existing leaking basements is becoming more important. SikaProof®-A provides a simple, cost-effective sandwich waterproofing system with high durability and performance.



**PRECAST CONSTRUCTION**  
As a pre-applied system, SikaProof®-A can easily be integrated in precasting to provide a simple, time-saving and cost-effective solution.

## USED FOR DRY BASEMENTS IN COMMERCIAL AND RESIDENTIAL BUILDINGS



**CAR PARKS**



**ARCHIVES**



**TECHNICAL ROOMS**



**LIVING AREAS**

## AND WATERTIGHT BASEMENTS AND BELOW-GROUND STRUCTURES



**LEISURE FACILITIES**



**UNDERGROUND STATIONS**



**UNDERPASSES**



**SERVICE ROOMS**

# SikaProof® MEMBRANE SYSTEM – AN OVERVIEW



SikaProof® offers two systems and methods of installation:

### SikaProof®-A – THE ‘PRE-APPLIED’ SYSTEM

The membrane is installed in the formwork before the reinforcement and concrete is placed. Membrane sheets are available in 1m and 2m wide rolls with prefabricated self-adhesive strips. Fewer joints and faster installation time, makes the whole process more efficient, especially on large areas.

### SikaProof®-P – THE ‘POST-APPLIED’ SYSTEM

The membrane system is installed on the existing concrete structure. To create a durable and enhanced bond, use with SikaProof® Primer-01 prior to the peel and stick SikaProof®-P membrane sheets being installed.

Both systems are cold-applied – the joints are not welded with hot-air guns and the membrane sheets are not torched-on with open flames. The SikaProof® system is simply bonded with self-adhesive strips and tapes, which ensures fast and secure installation. Sika can provide appropriate finishing accessories as we understand the importance of attention to detail.

SikaProof® systems are therefore an efficient standalone solution for basement waterproofing or engineered waterproofing for new and existing below-ground civil engineering structures.

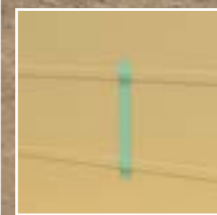
SikaProof® systems can be easily combined with other compatible Sika waterproofing products, such as Sika joint sealing, to design and create a complete solution for durable and cost-efficient, watertight construction, whatever the requirements.

1



SikaProof®-A, pre-applied membrane

2



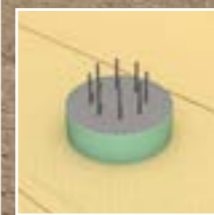
SikaProof® detailing tapes

3



SikaProof®-P, post-applied membrane

4



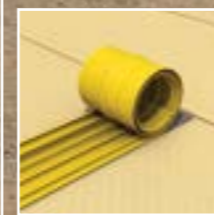
SikaProof® detailing solutions, e.g. for pile caps

5



SikaSwell®-A, joint waterproofing profiles

6



Sika® Waterbars, joint waterproofing

7



SikaFuko® VT injection hose

8



Sikadur®-Combiflex® SG System

9



WT protection sheet / felt and thermal insulation boards

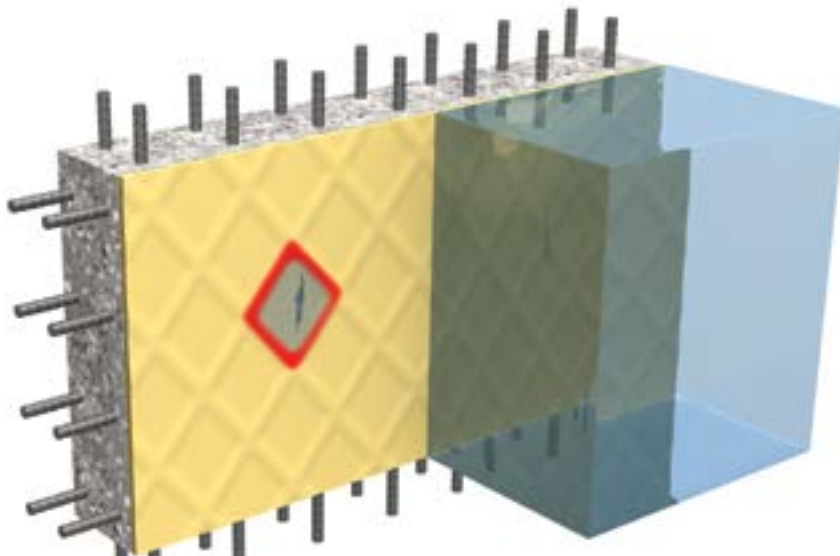
# THE FULLY-BONDED TECHNOLOGY

## FULLY-BONDED – WHAT DOES IT MEAN...

The fully-bonded technology was developed from Sika's elastic sealant and adhesive bonding expertise.

An embossed, highly-flexible polyolefin membrane, with a unique grid pattern of sealant and specially designed non-woven fleece, means any water ingress is limited to the damaged area and is prevented from lateral under-flowing or migrating any further between the membrane and the concrete structure. As water is localised, any damage can be easily repaired by a local injection.

The fully-bonded nature, means the success of SikaProof®-A and -P is not only dependent on the membrane system, but also the right concrete quality, appropriate concrete mix design and the right workmanship to produce, place, finish and cure the concrete surfaces. Sika provides a wide range of concrete admixtures and technologies to help achieve this, either with the 'Sika Mix Design Tool' or our technical services on site.



The fully-bonded system has been tested and proved in function tests according to ASTM and German standards.

The bonded membrane surface, concrete surface and detail accessories are tested against a certain water pressure over a specific time period against lateral water under-flow.



The SikaProof® fully-bonded system limits any water ingress / leakage in the event of damage as water is localised within the unique polyolefin membrane and by the grid pattern of sealant.

If non-bonded systems are damaged, water spreads uncontrollably between the membrane and the concrete. Water can easily enter any weak point of the structure, including joints or cracks.

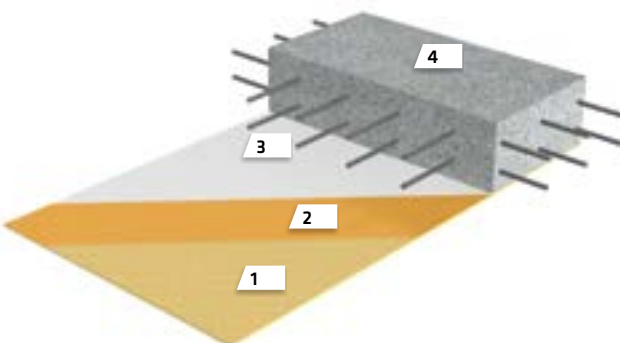
## ...AND HOW DOES IT WORK?

The pre-applied **SikaProof®-A system** is cast onto, which means that the membrane system is installed in the formwork before the reinforcement and concrete are added, i.e. the structural concrete is cast directly onto the membrane. The fresh concrete fully covers the fleece backing layer and creates a durable mechanical bond once the concrete structure is set.



### THE SYSTEM BUILD-UP

SikaProof®-A is a multi-layer design of an embossed FPO membrane (1) based on Sikaplan® technology available in three thicknesses 0.5, 0.8 and 1.2mm. It is laminated with a unique Sika sealant (2) and specially designed fleece layer (3). This membrane system is prefabricated with a self-adhesive strip for easy fitting. Finally the structural concrete (4), following the Sika Concrete Mix Design, creates an optimal mechanical bond.



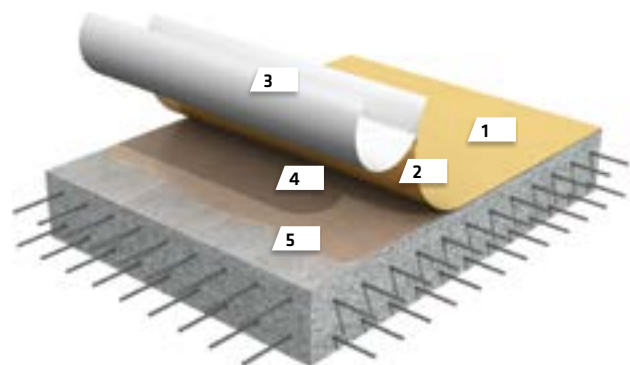
The post-applied **SikaProof®-P system** is 'peel and stick', which means that the self-adhesive membrane system is installed by peel and sticking directly onto the hardened concrete surface. The surface bond is created and enhanced by the system primer to ensure a durable adhesion of the unique Sika adhesive sealant within the membrane system onto the existing concrete structure.



### THE SYSTEM BUILD-UP

SikaProof®-P has an FPO membrane (1) based on Sikaplan® technology and is supplied 0.6mm thick. It is coated with a unique Sika adhesive sealant (2), and protected with a peel-release film (3).

The hardened structural concrete substrate (5) should be prepared and primed with SikaProof® Primer-01 (4).



# ADVANTAGES AND BENEFITS

## FPO MEMBRANE

SikaProof® is based on proven FPO Sikaplan® membrane used in tunneling and is backed up by more than 45 years' experience across the world.

### ADVANTAGES

- Highly-flexible membrane
- Highly-durable and resistant to aging
- High resistance to aggressive mediums in natural soil and groundwater or seawater, as well as against natural gases
- Independent proven life expectancy in excess of 60 years.

### BENEFITS

- High crack-bridging ability
- High durability, long-lasting
- High protection of living areas against environmental influences
- SikaProof can be used as a gas resistant membrane for basements and other below ground concrete structures when used as part of a gas protection system according to BS8485
- SikaProof A has been tested for CO<sub>2</sub>, Methane and Radon gas permeability.



## FULLY-BONDED SYSTEM

The fully-bonded membrane system prevents any lateral water underflow in the event of any damage. The SikaProof® membrane acts as the first waterproofing barrier with the full-bond acting as the back-up waterproofing barrier.

### ADVANTAGES

- No lateral water underflow
- Limit the water ingress / leakage
- Can be easily and efficiently repaired using local resin injection.

### BENEFITS

- High reliability and system security
- Reduced time and cost of any remedial work.



## ADHERED OVERLAP JOINTS

The SikaProof®-A system is adhered and bonded together using preformed adhesive strips and / or detailing tapes. SikaProof®-P is bonded using the adhesive rear layer. Detailing tapes can be used to supplement this if necessary.

### ADVANTAGES

- Easy and quick installation
- No hot-air welding or open flame / torch required.

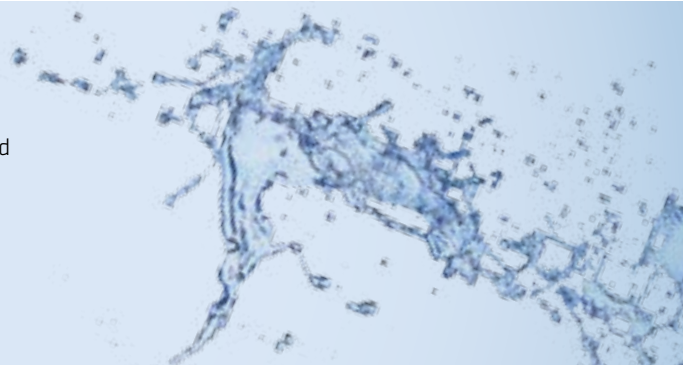
### BENEFITS

- Time and cost-efficient due to the very easy and fast installation especially for complex structures
- No special investment in equipment required.



## Our guarantees are watertight...

- **20-YEAR GUARANTEE** on SikaProof®-A (0.8mm or 1.2mm thicknesses) and SikaProof®-P (1.2mm thickness), when used in a dual system in conjunction with Sika® Watertight Concrete or Sika® Cavity Drainage System.
- **15-YEAR GUARANTEE** on SikaProof®-A (0.8mm or 1.2mm thicknesses) and SikaProof®-P (1.2mm thickness), when used as a single system.



## VARIOUS DIMENSIONS

Due to the easier workability, SikaProof®-P, the post-applied system, is only available in 1m wide rolls.

### ADVANTAGES

- SikaProof®-A is provided in three membrane thicknesses (0.5, 0.8 and 1.2mm)
- SikaProof®-A membrane sheets are available in 1.0 and 2.0m wide rolls.

### BENEFITS

- Optimised costs due to the use of the appropriate membrane thickness according to its application
- Roll width of 2.0m reduces installation time and the number of overlap joints required
- High time and cost efficiency installation.



## COMPLETE SOLUTION

Sika has over 100 years of experience and know-how in waterproofing and provides a full range of waterproofing solutions.

### ADVANTAGES

- Complete pre- and post-applied system with SikaProof®-A and -P including complementary components for joints
- BBA-certified system including tape components.

### BENEFITS

- High compatibility, reliability and system security
- Everything from one supplier
- One contact and support is provided.



## SUSTAINABILITY

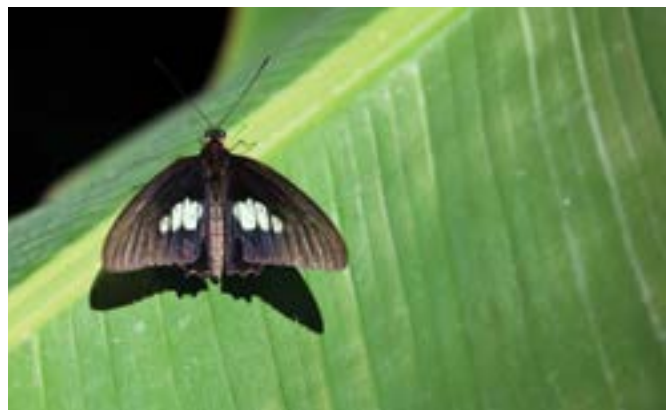
Sika aspires to supply customers with innovative, efficient and sustainable solutions with regard to the megatrends, such as carbon savings or energy and water reduction.

### ADVANTAGES

- No overall release liner for SikaProof-A system
- No open-torch or flame
- No segregation, washing-out or leaching.

### BENEFITS

- Less waste and less cost
- Low carbon footprint
- Very environmentally friendly.



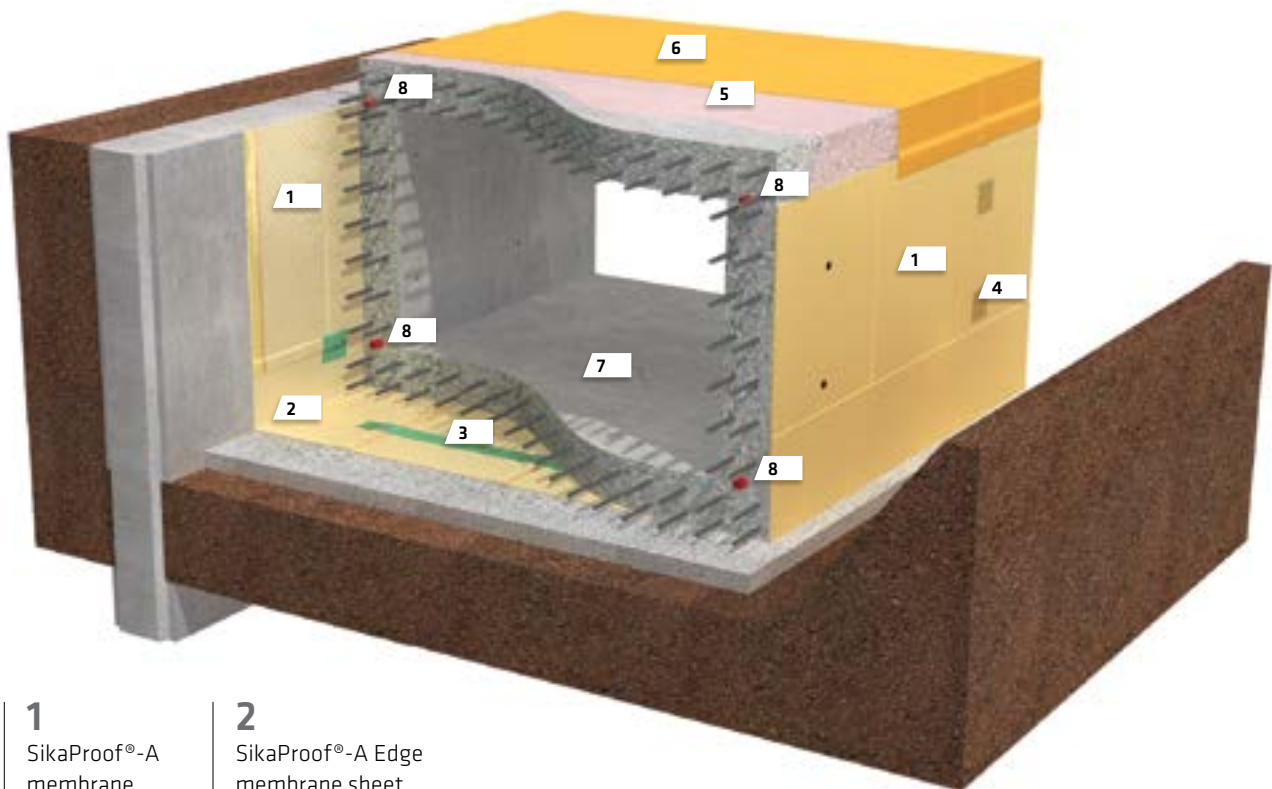


# WHERE TO USE SikaProof®-A AND -P

## SikaProof®-A – THE PRE-APPLIED WATERPROOFING SYSTEM

As a pre-applied solution, the SikaProof®-A membrane system can easily be applied on the blinding concrete for the base slab and to the prepared vertical excavation wall, e.g. on diaphragm walls, piled walls, or similar.

Alternatively it can be applied directly onto the outer interior side of double-faced formwork in open-cut excavation. In this type of project, the shuttering anchor / tie-bar penetration holes have to be sealed after removing the formwork.



**1**  
SikaProof®-A  
membrane

**2**  
SikaProof®-A Edge  
membrane sheet

**3**  
SikaProof®  
Tape-150,  
internal tape

**4**  
SikaProof®  
Patch-200 B

**5**  
SikaProof®  
Primer-01

**6**  
SikaProof®-P  
membrane

**7**  
Sika® Watertight  
Concrete

**8**  
Joint solution,  
SikaSwell®-A  
and S-2



Vertical excavation wall – a typical use for SikaProof®-A under the raft and at the walls.

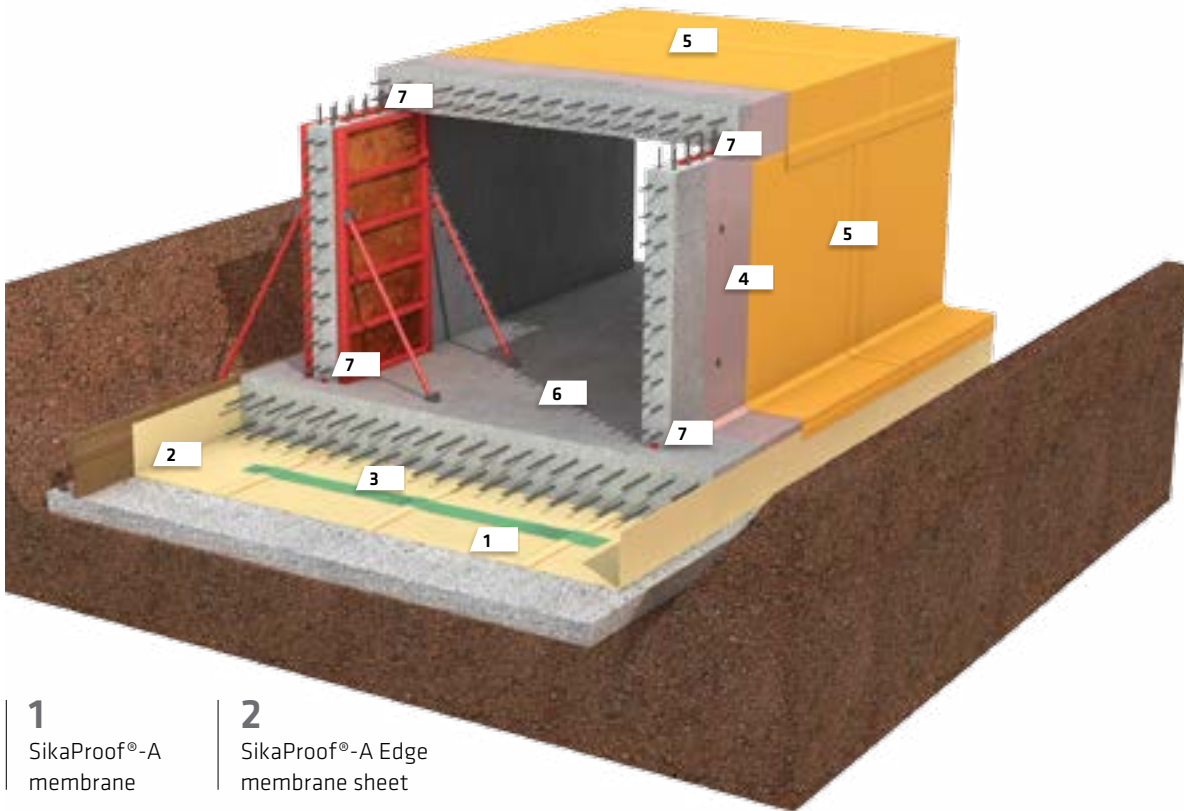


Open excavation with SikaProof®-A – after removing the formwork the anchor penetrations have to be sealed.

## SikaProof®-P – THE POST-APPLIED WATERPROOFING SYSTEM

The self-adhesive SikaProof®-P system can be easily applied on existing prepared concrete structures in open excavations on vertical walls and horizontal areas, e.g. protrusion / junction slab to wall or roof decks.

In this case the shuttering anchor penetrations will be sealed in one step by the membrane, covering the entire area meaning no additional processes are required.



**1**  
SikaProof®-A  
membrane

**2**  
SikaProof®-A Edge  
membrane sheet

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SikaProof®  
Tape-150,  
internal tape

**4**  
SikaProof®  
Primer-01

**5**  
SikaProof®-P  
membrane

**6**  
Sika® Watertight  
Concrete

**7**  
Joint solution,  
SikaSwell®-A and S-2



Open excavation with protrusion slab to wall, here the complete structure could be simply sealed with SikaProof®-P.



For open excavations the protection of the SikaProof® membrane is very important, especially due to the backfilling.

# SikaProof® SYSTEM COMPONENTS

## PRE-APPLIED SYSTEM

### SikaProof®-A MEMBRANES

Available in 1.0 or 2.0m widths and in three different membrane thicknesses, for particular application.

Used for damp-proofing especially in floors above ground and for waterproofing of walls with less-stringent requirements:

- SikaProof®-A-05.

Used for concrete protection and waterproofing:

- SikaProof®-A-08
- SikaProof®-A-12.



SikaProof®-A membranes, 1.0 and 2.0m width

### SYSTEM COMPONENTS

Used together for sealing joints and creating detail solutions within the system:

- SikaProof® Tape-150, internal adhesive tape to seal the inside of the membrane system
- SikaProof® ExTape-150, external adhesive tape to seal the outside, membrane side, of either SikaProof®-A or -P.



SikaProof® Tape-150



SikaProof® ExTape-150

### ACCESSORIES

- SikaProof®-A-08 / A-12 Edge, reformed L-shaped edge sheet in 1.0m width with self-adhesive strips on each side. Used for edge connections between slab and walls
- SikaProof® Patch-200 B, external adhesive tape in 200mm width based on the SikaProof®-A membrane. Used to seal any penetrations, joints and in case of any damage on the outside of the membrane surface
- SikaProof® FixTape-50, double sided-adhesive tape in 50mm width. Used to seal and fix / repair details within the system
- SikaProof® MetalSheet, metal strip laminated with special sealant on both sides. Used to seal joints and pile caps detail within the system.



SikaProof®-A-08 / A-12 Edge



SikaProof® Patch-200 B



SikaProof® FixTape-50



SikaProof® MetalSheet

## POST-APPLIED, SELF-ADHERED SYSTEMS

### SikaProof®-P

The self-adhesive membrane is available in 1.0m widths, easy to handle, with a specially designed adhesive overlap edge and installation mark.

Used for concrete protection, damp and waterproofing application, based on 0.6mm membrane but with an overall effective thickness of 1.2mm:

- SikaProof®-P-12.



SikaProof®-P-12 membrane with special edge design

### SYSTEM COMPONENTS

Use the system primer to enhance the bonding ability and bind dust.

- SikaProof® Primer-01, is a ready to use solvent-dispersed primer, available in 5kg and 12.5kg metal tins
- Use with SikaProof® Tape-150, SikaProof®-P-12 or Sika® BituSeal S-115.

Used for sealing joints of membrane overlaps or for detailing:

- SikaProof® ExTape-150
- Sikaflex®-11 FC or Sikaflex® PRO-3.



SikaProof® Primer-01, in 5kg and 12.5kg metal tins

SikaProof® ExTape-150



# COMPLEMENTARY WATERPROOFING SYSTEMS

**THE SikaProof®-A AND -P SYSTEMS** require an additional joint sealing solution for all construction and expansion joints, as well as for details and junctions to create a secondary secure waterproofing barrier at joints, like the fully-bonded SikaProof® system as back-up in the area.

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## SIKASWELL® SWELLABLE PRODUCTS

The efficient solution for construction joints and additional sealing of penetrations provides an additional security. Use the full range of hydrophilic (swellable) profiles, rings and gun-applied sealants.



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## SIKA® WATERBARS

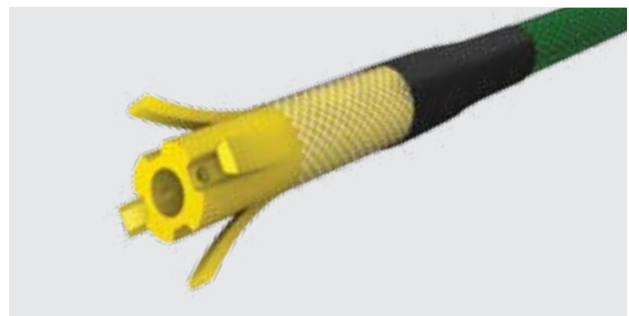
The most common joint sealing solution for construction joints and especially mandatory for expansion joints. Use the appropriate profile of the wide Sika® Waterbar range.



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## SIKAFUKO® INJECTION HOSES SYSTEM

Typically used as secondary or additional back-up systems to post seal construction or movement joints as well for other details, e.g. around piles in order to increase their watertight security. It is re-injectable using the appropriate Sika injection material.



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## SIKADUR®-COMBIFLEX® SG SYSTEM / SIKAPLAN® WT TAPE

The post-applied tape system adhered with epoxy resin onto the membrane side, provides an optimal solution for construction and expansion joints, especially for sealing the joints of precast constructions.



**ALTERNATIVE POST-APPLIED** fully-bonded membrane waterproofing systems for basements and other below-ground structures that could be used as standalone solutions or in combination with the SikaProof®-A.

### SIKALASTIC®

Two liquid-applied membrane systems are used for basement waterproofing:

- Sikalastic®-851, 2K Polyurethane resin based
- Sikalastic®-8800, 2K Polyurea resin based.

Generally the systems will be spray-applied onto prepared and primed hardened concrete surfaces of the structure to achieve an optimal fully-bonded system.



### SIKA® BITUSEAL S-115

A post-applied self-adhesive waterproofing sheet membrane based on modified bitumen, reinforced with polyester non-woven fabric. It has a silicone treated release liner on the upper and lower surfaces to aid installation. It is a tough, durable, self-adhesive sheet with an overall thickness of 1.5mm.

Sika® BituSeal S-115 is available in 1.0m widths and is designed for use as an under-layer in fully self-adhesive multi-ply built-up systems. It has BBA certification and CE marking.

Used for waterproofing and damp-proofing of foundations. Particularly exterior walls of basements to protect against percolating water and damp soil retaining walls (according to EN 13969).

- Sika® BituSeal Primer, used as a primer for Sika® BituSeal S-115 to increase adhesion and bond to the substrate. It comprises a blend of bitumen and hydrocarbon solvent
- Sika® BituSeal Reinforcing Tape, a 300mm wide x 20m long reinforcing tape to strengthen all internal and external angles
- Sika® BituSeal Self Adhesive Tape, a 150mm wide x 20m long tape used for jointing / detailing in conjunction with Sika® BituSeal S-115.

Sika® BituSeal S-115



Sika® BituSeal Self Adhesive Tape

Sika® BituSeal Primer

**Our solutions deliver performance that really holds water.**

Discover more at [www.sikawaterproofing.co.uk](http://www.sikawaterproofing.co.uk) and start putting water in its place.

# SIKA FULL RANGE SOLUTIONS FOR CONSTRUCTION:



WATERPROOFING



CONCRETE



REFURBISHMENT



MERCHANT



SEALING AND BONDING



FLOORING



ROOFING



INDUSTRY

## FOR MORE INFORMATION:



Visit [www.sikawaterproofing.co.uk](http://www.sikawaterproofing.co.uk)

### WHO WE ARE

Sika Limited and Sika Ireland Limited are part of the global Sika Group, specialising in the manufacture and supply of chemical based products for construction and industry. Sika is a world-leader in its field with subsidiaries in 90 countries around the world and manufactures in over 160 factories. With approximately 17,000 employees Sika generates annual sales of CHF 5.6 billion (£3.9bn). We are also committed to providing quality, service, safety and environmental care.

In the UK and Ireland, we provide market-leading solutions for concrete, waterproofing, roofing, flooring, refurbishment, sealing & bonding, and industry, and have manufacturing sites in Welwyn Garden City, Preston, Leeds and Dublin with more than 700 employees and a turnover of more than £190 million.

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 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 proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request.



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