



# WATERPROOFING

## SikaProof® FULLY BONDED MEMBRANE SYSTEMS FOR WATERTIGHT BASEMENTS

TECHNOLOGY & SYSTEMS

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

**BASEMENTS AND OTHER BELOW GROUND STRUCTURES** that are exposed to aggressive ground conditions and stress, or those that must provide a completely dry internal environment, whilst also being durable with a long service life; have the key requirement of a reliable, high performance waterproofing solution. The function of the waterproofing should also be engineered to include the protection of the concrete structure itself against the potentially harmful influences of aggressive natural mediums and gases in soil and ground or sea water.

Sika provides the unique fully bonded, high flexible TPO membrane systems that can easily meet all of the stringent requirements and safely accommodate the owner's needs – to create and keep their new and existing basements structures durably and securely watertight. Nowadays basements and other below ground structures have to accommodate more and more demanding performance specifications, due to owner's requirements from arranging their living and leisure areas in the basements of residential buildings, or for special technical facilities, services and sensitive storage areas in commercial buildings. Due to its simple, fast and secure application the unique SikaProof® A&P system can be used not only for new structures as well as for the renovation of existing basements structures is gaining an increasingly important role.

The unique fully bonded SikaProof® membrane systems provide this high level of dry environment with its key character the fully bond. It protects not only the concrete structure, it builds up the fully bond together with the concrete that prevents lateral water underflow between the concrete structure and the membrane system, in the event of any damage to the membrane.

The high reliability and watertight security achieved with the SikaProof® systems, combined with experience from around the world over more than 45 years, gives basement owners, specifiers and contractors the highest level of confidence in achieving their objectives.



# TYPICAL APPLICATIONS

**SIKAPROOF® A&P SYSTEM** can be used for new structures as well as for the renovation of existing basements structures and for a variety of other different more and more demanding applications



**NEW BASEMENT STRUCTURES**  
of commercial or residential buildings the requirements of structural waterproofing are become more demanding. The unique fully bonded SikaProof® A&P systems provide a durable, long service-life and are a cost effective solution.



**RENOVATION WORK ON EXISTING STRUCTURES**  
“TANK IN A TANK” Refurbishment of existing leaking basements become more important. SikaProof® A as a pre-applied fully bonded system, provides a simple, cost effective solution with high durability and security.



**PRECAST CONSTRUCTION**  
Construction always has to be optimized and so the precast industry is becoming more important. SikaProof A as a pre-applied system can easily be installed already in the precast factor, that provides a simple, time and cost optimized 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**



**METRO STATIONS**

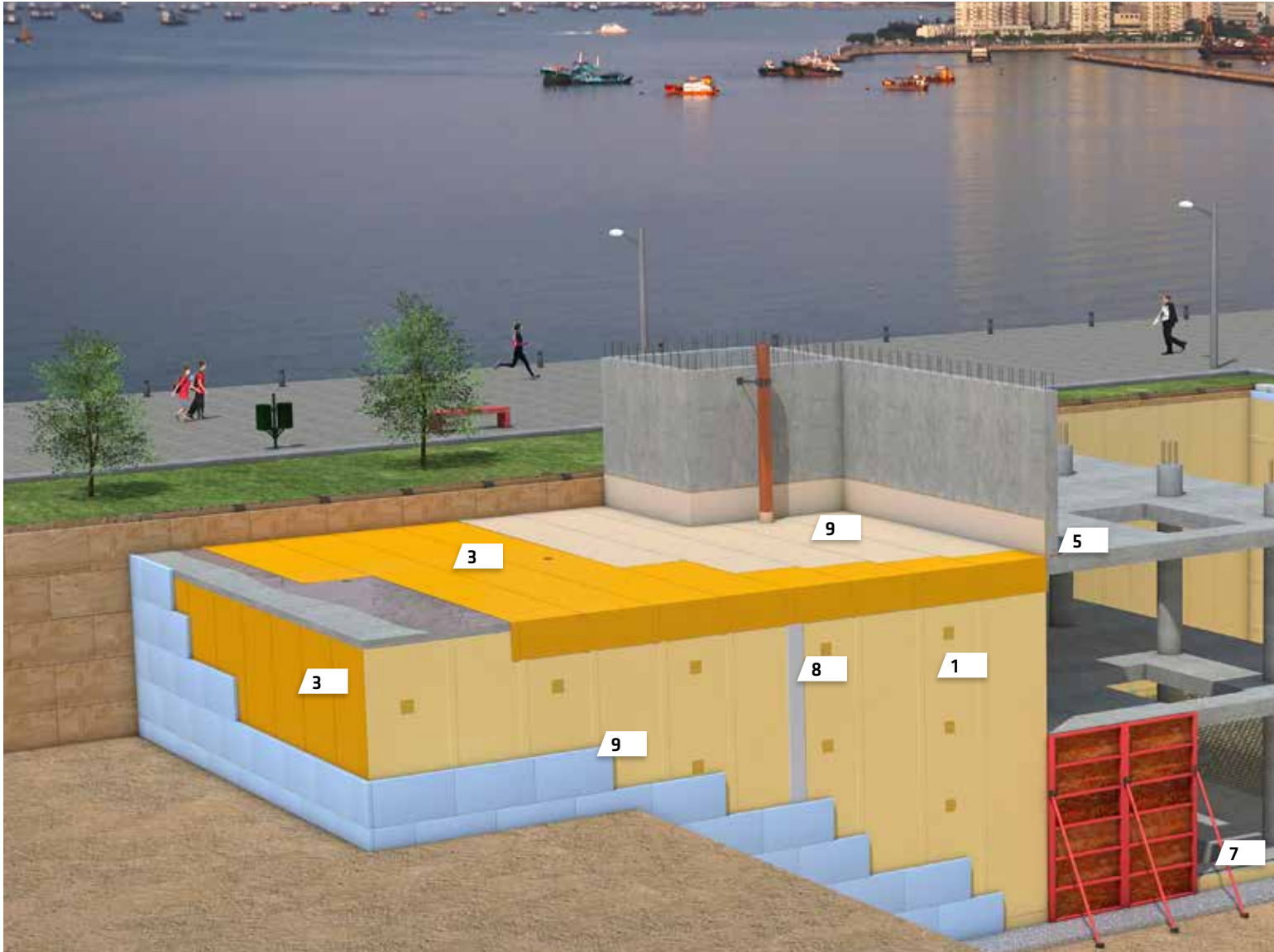


**UNDERPASSES**



**SERVICE ROOMS**

# SikaProof® MEMBRANE SYSTEM – AN OVERVIEW

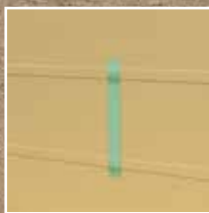


1



SikaProof® A, pre-applied membrane

2



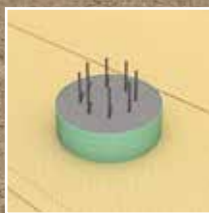
SikaProof® detailing tapes

3



SikaProof® P, post-applied membrane

4



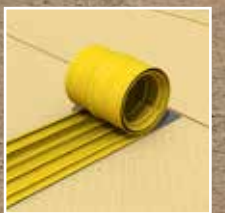
SikaProof® detailing solutions, e.g. for pile caps

5

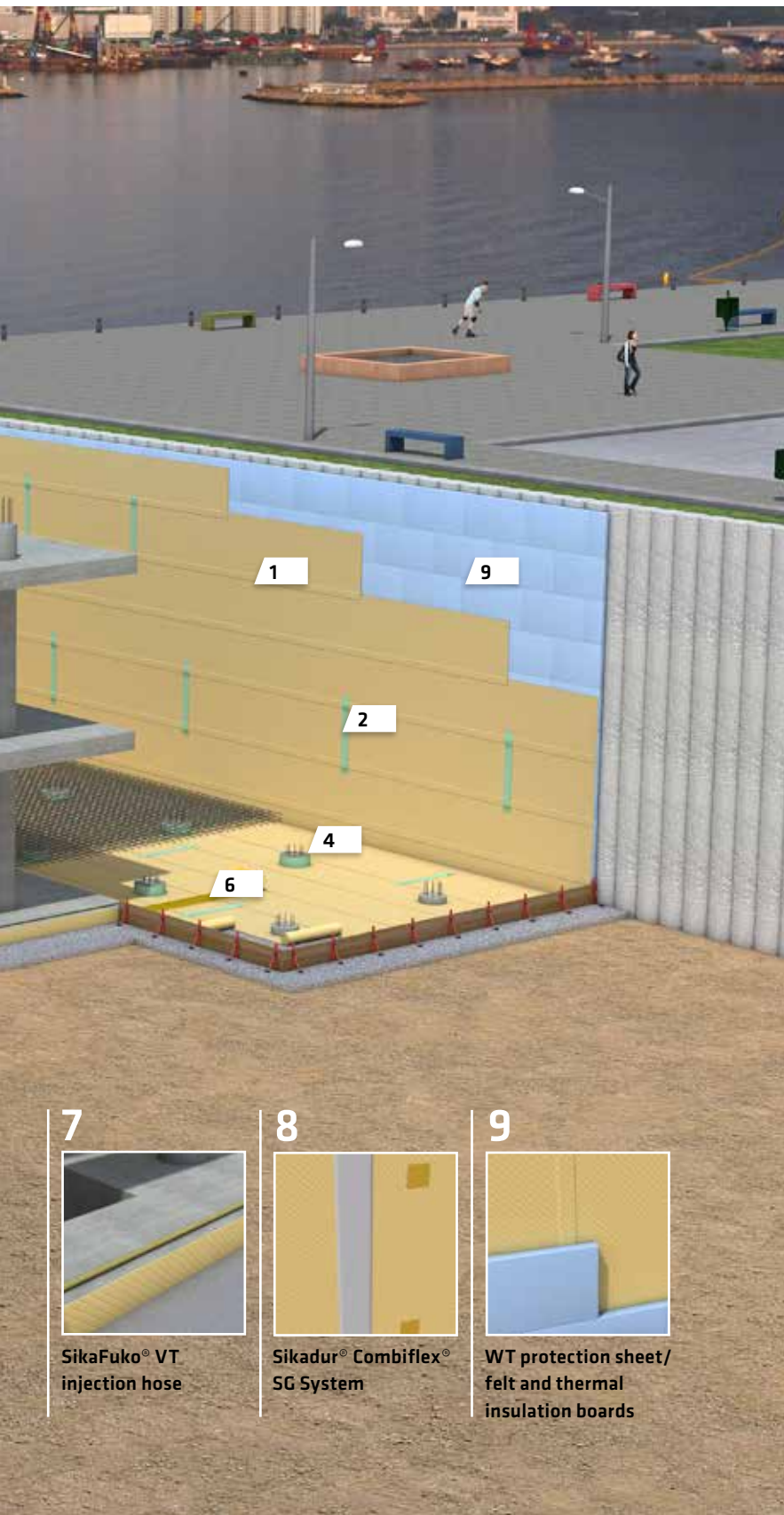


SikaSwell® A, joint waterproofing profiles

6



Sika® Waterbars, joint waterproofing



The SikaProof® system consists of two alternative methods of installation:

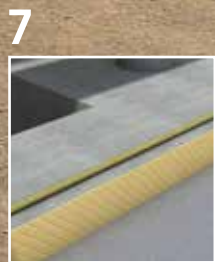
**SikaProof® A - the 'pre-applied' system**, which means that the membrane is installed in the formwork before the reinforcement and concrete is placed. The membranes sheets are available in 1.0 and 2.0 wide rolls with a prefabricated self-adhesive strip. That features recude joints and installation time, what makes the installation especially on large areas more efficient.

**SikaProof® P the 'post-applied' system**, which means that the membrane system is installed on the hardened / existing concrete structure. To create a durable and enhanced fully bond the use of SikaProof® Primer-01 onto the prepared concrete surfaces prior to the peel and stick SikaProof® P membrane sheets being installed.

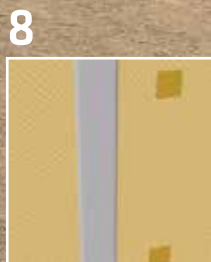
The entire system is cold applied - the overlap joints are not welded by hot-air guns and the membrane sheets are not torched-on with open flames. The SikaProof® system is much easier, as it is simply bonded with self-adhesive strips and tapes, which makes the system fast and secure to install. The details are the key therefore Sika provides appropriate accessories to create proved detail solutions for all standard details.

SikaProof® systems are therefore an efficient standalone solution for basement waterproofing. Additionally for the engineered waterproofing of new and existing basements and below ground civil engineering structures.

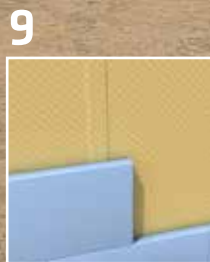
The SikaProof® systems can easily be combined with other compatible Sika Waterproofing solutions, such as Sika Joint Sealing Solutions, to design and create a complete solution for durable and cost-efficient watertight construction, whatever the requirements.



**7**  
SikaFuko® VT  
injection hose



**8**  
Sikadur® Combiflex®  
SG System



**9**  
WT protection sheet/  
felt and thermal  
insulation boards

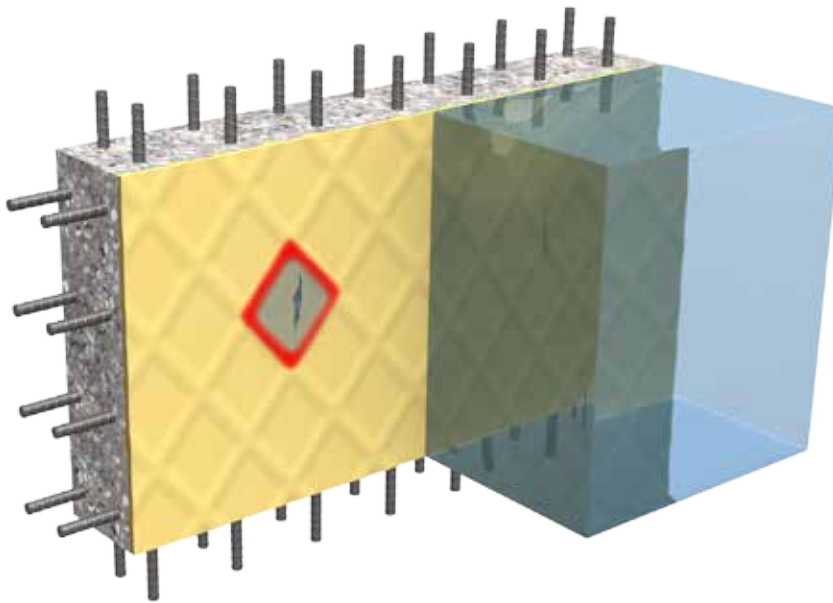
# THE FULLY BONDED TECHNOLOGY

## FULLY BOND – WHAT DOES IT MEAN ...

The fully bonding technology was developed from Sika's elastic sealant and adhesive bonding expertise, which provides a durable, flexible bond between the membrane system and the structural concrete. This key characteristic provides high security and a reliably watertight solution, especially in the event of any damage to the membrane.

Any water ingress is limited to the damaged area only and the water is prevented from lateral under-flowing any further between the membrane and the concrete structure. That makes the remedial of any damage very simple and effective, due to its local limited area, it can be easily repaired by a local injection.

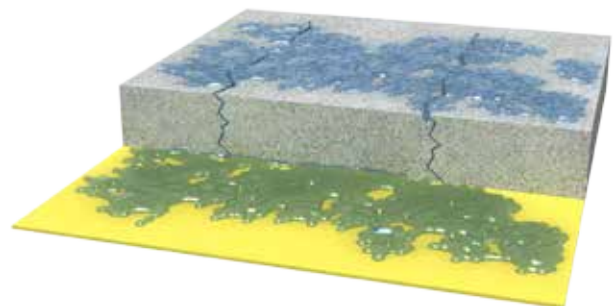
The key feature of "full bond" is common to both SikaProof® A&P and this bond is not only dependent on the membrane system. The right concrete quality ensures the success of the fully bond system. This means the appropriate concrete mix design and the right workmanship to produce, place, finish and cure the concrete surfaces. Sika provides a wide range of concrete admixtures and technologies to help achieve this with the "Sika Mix Design Tool" for example, as well as our technical services on site.



The «fully bond» has been tested and proved in function tests according to ASTM and German standards. Thereby the bonded membrane surface onto concrete and detail solutions are tested against a certain water pressure over a specific period against lateral water underflow.

The SikaProof® fully bond system limits any water ingress / leakage of the structure in the event of any membrane damage just on that damaged area.

If non-bonded systems will be damaged, water spreads uncontrolled between the membrane and the concrete. Water can easily enter every weak point of the structure, such as joints and cracks.



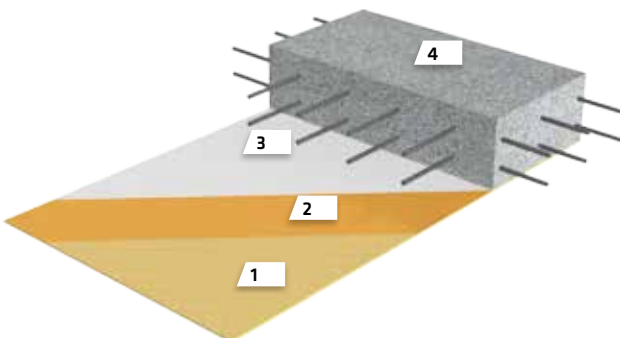
## ... AND HOW DOES IT WORK?

**The pre-applied – SikaProof® A system, cast onto**, which means that the membrane system is installed in the form-work before the reinforcement and concrete are placed. The structural concrete is casted directly onto the membrane. The fresh concrete fully embed the fleece backing layer and create a durable mechanical bond with the hardened concrete structure.



### THE SYSTEM BUILD-UP:

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

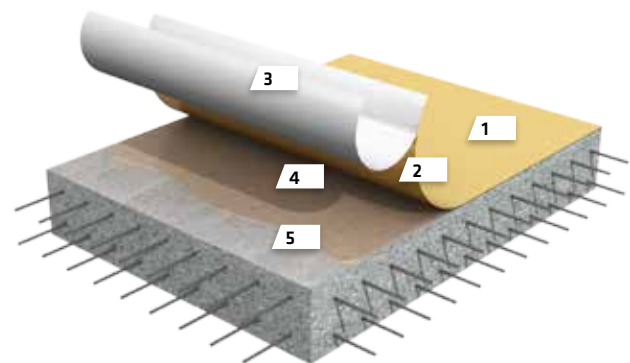


**The post-applied – SikaProof® P system, peel & stick**, which means that the self-adhesive membrane system is installed by peel & stick directly onto the hardened concrete surface. The bond to the surface is created and enhanced by the system primer to ensure a durable adhesion of the unique Sika adhesive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



### THE SYSTEM BUILD-UP:

SikaProof® P is based on a FPO membrane (1) based on Sikaplan® technology available in thickness 0.6 mm. It is coated with a unique Sika adhesive sealant (2), and protected with a peel-release film (3). The hardened structural concrete substrate (5) is prepared and primed with SikaProof® Primer-01 (4).



# ADVANTAGES AND BENEFITS

## FPO MEMBRANE

The SikaProof® is based on proven FPO Sikaplan membrane used in tunneling and known for more than 45 years all around the world.

### THE MAIN ADVANTAGES:

- High flexibility membrane
- High resistance to aging
- High resistance to aggressive mediums in natural soil and ground-/sea water, as well against natural gases.

### THE MAIN BENEFITS:

- High crack-bridging ability
- High durability, long-lasting
- High protection of living areas against environmental influences



## FULLY BONDED SYSTEM

Is the back-up barrier of the SikaProof® system in the event of any damage of the membrane, the primary waterproofing barrier.

### THE MAIN ADVANTAGES:

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

### THE MAIN BENEFITS:

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



## ADHERED OVERLAP JOINTS

SikaProof® A&P systems are adhered and bonded together using pre-formed adhesive strips and/or detailing tapes. Therefore no specialist heat welding with machines or hot-air guns is required.

### THE MAIN ADVANTAGES:

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

### THE MAIN BENEFITS:

- High time and cost efficiency due to the very easy and fast installation especially for complex structures.
- No special investment in equipment





## VARIOUS DIMENSIONS

Due to the easier workability the post-applied system SikaProof® P is only available in 1.0 m wide rolls.

### ADVANTAGES:

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

### BENEFIT:

- Cost optimization due to the use of the appropriate membrane thickness according its demand application
- Roll wide of 2.0 m reduce installation time and number of overlap joints
- High time and cost efficiency installation



## COMPLETE SOLUTION

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

### ADVANTAGES:

- Complete pre- and post- applied system with SikaProof® A&P including complementary components for joints
- Tested and approved detail solutions and junctions

### BENEFIT:

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



## SUSTAINABILITY

Sika aspires on supplying 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

### BENEFIT:

- Less waste and less costs
- Low carbon footprint
- Very enviromently friendly

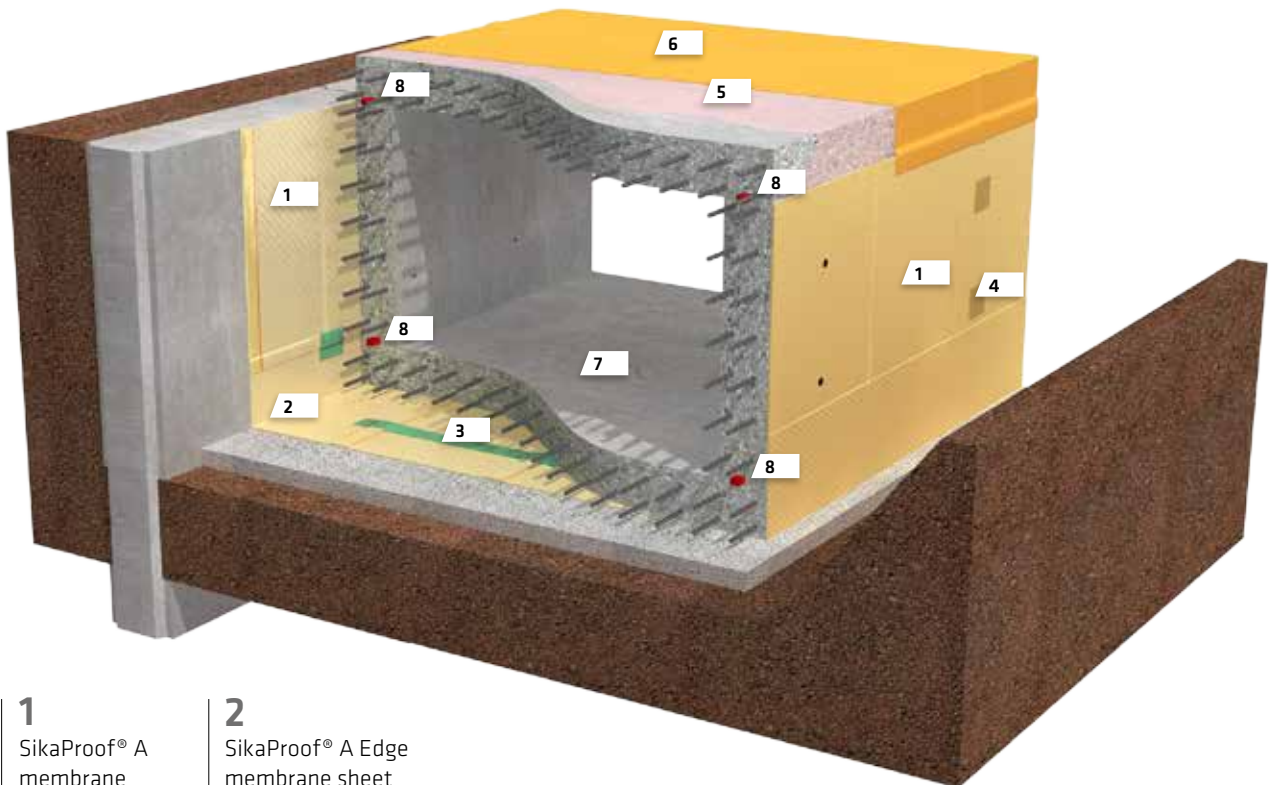


# WHERE TO USE SikaProof® A&P?

## SikaProof® A, 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&S-2



Vertical excavation wall, typically use for SikaProof® A under the raft and at the walls.

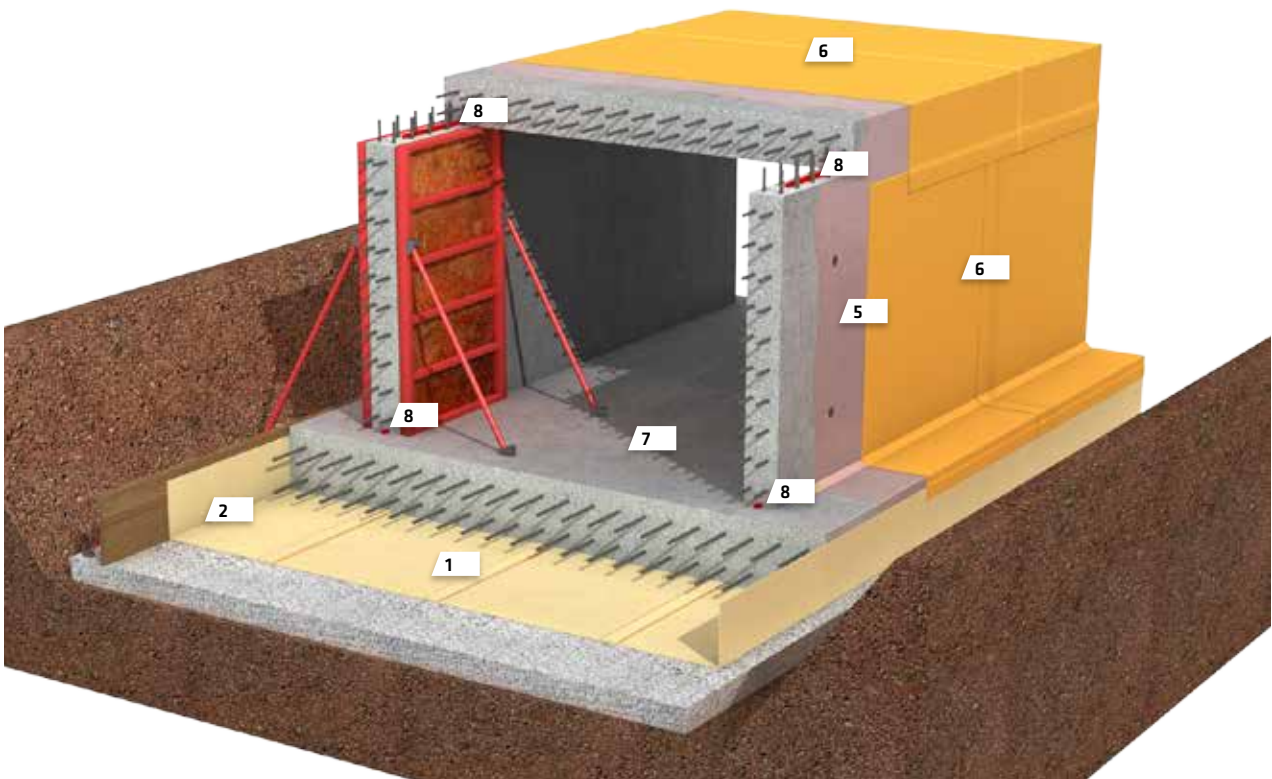


Open excavation with SikaProof® A, after removing the formwork the anchor penetrations has to be sealed.

## SikaProof® P, 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 together with the membrane in the entire area, so no additional process is required.



**1**

SikaProof® A  
membrane

**5**

SikaProof®  
Primer-01

**6**

SikaProof® P  
membrane

**7**

Sika® Watertight  
Concrete

**8**

Joint solution,  
SikaSwell® A&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 2.0 m width and in three different membrane thicknesses, for particular application:

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

- SikaProof® A-05

Used for concrete protection and waterproofing

- SikaProof® A-08
- SikaProof® A-12

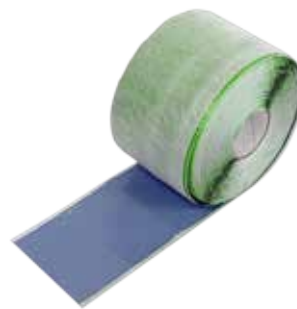


SikaProof® A membranes, 1.0 and 2.0 m width

### SYSTEM COMPONENTS

Used together for sealing joints and create detail solutions with in 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, either of SikaProof® A&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. Using for edge connections between slab and walls.
- SikaProof® Patch-200 B, external adhesive tape in 200 mm width based on the SikaProof® A membrane. Using to seal any penetrations, joints and in case any damage on the outside of the membrane surface.
- SikaProof® FixTape-50, double sided-adhesive tape in 50 mm width. Using to seal and fix/repair details within the system.
- SikaProof® MetalSheet, metal strip laminated with special sealant on both side. Using to seal joints and the pile caps detail within the system.



SikaProof® A-08/-12 Edge



SikaProof® Patch-200 B



SikaProof® MetalSheet



SikaProof® FixTape-50

## POST-APPLIED, SELF-ADHERED SYSTEMS

### SikaProof® P

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

Using for concrete protection, damp- and waterproofing application, based on 0.6 mm membrane:

- SikaProof® P-12



### SYSTEM COMPONENTS

Using 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 12.5 kg metal pails. Using either for SikaProof® Tape-150, SikaProof® P-12 or SikaBit® S-515.

Using for sealing joints of membrane overlaps or for detailing:

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



# COMPLEMENTARY WATERPROOFING SYSTEMS

**THE SIKAPROOF® A&P SYSTEM** requires an additional joint sealing solution for all construction, expansion joints as well for details and junctions to create a secondary secure waterproofing barrier at joints, like the fully bond of SikaProof® system as backup 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

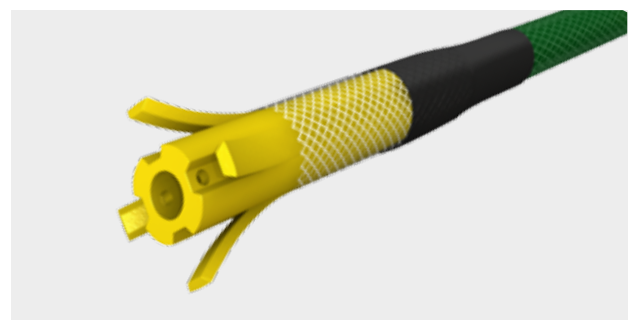
The commonest joint sealing solution for construction joints and especially mandatory for expansion joints. Using the appropriate profile of the wide Sika waterbar range.



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## SikaFuko® INJECTION HOSES SYSTEM

Typical use 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 structures that could be used as stand alone solutions or in combination with the SikaProof® A.

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**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.



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**SikaBit® S**

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

The membrane sheet consists of a high strength HDPE film coated with a SBS modified bitumen compound and protected with a silicon release paper, total 1.5 mm thickness. The self-adhesive sheets are applied on to the prepared and primed concrete structure to get optimal full bond.

Using for damp-proofing and waterproofing with low requirements:

- SikaBit® S-515

Using the system primers to enhance the bonding ability and bind dust.

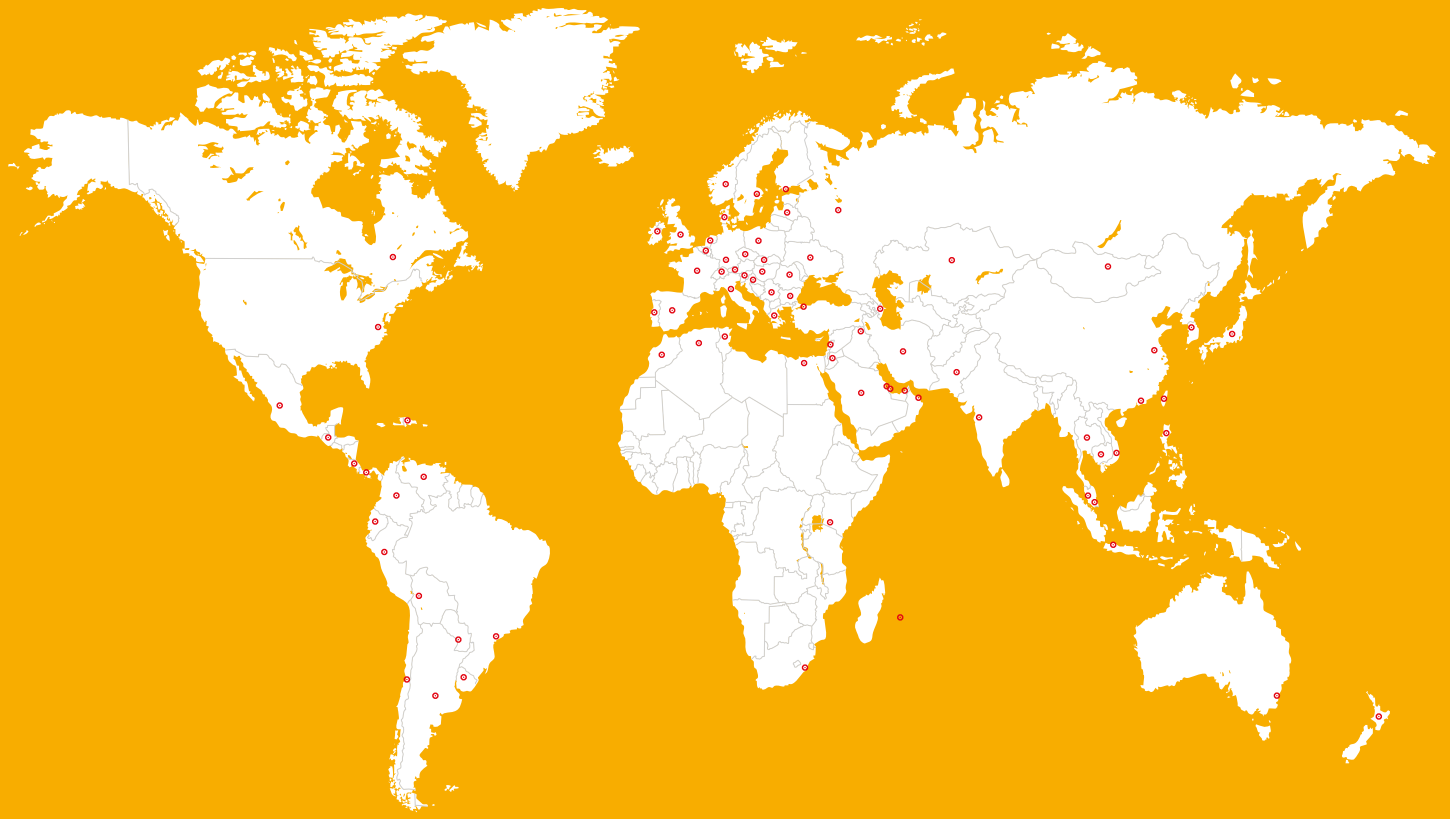
- SikaBit® P-05, is a ready to use water dispersed primer available in 18 kg plastic buckets. Using for low demand applications.
- SikaProof® Primer-01, is a ready to use solvent dispersed primer available in 5kg and 12.5 kg metal pails.



SikaBit® S-515 Membrane

SikaBit® P-05

# GLOBAL BUT LOCAL PARTNERSHIP



## FOR MORE INFORMATION:



### WE ARE SIKA

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Sika's product lines feature concrete admixtures, mortars, sealants and adhesives, structural strengthening systems, flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply.  
Please consult the Data Sheet prior to any use and processing.



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