



WATERPROOFING

SikaProof® FULLY BONDED MEMBRANE SYSTEMS FOR WATERTIGHT BASEMENTS

TECHNOLOGY & SYSTEMS

BUILDING TRUST



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

BASEMENTS AND OTHER BELOW GROUND STRUCTURES which are exposed to aggressive ground conditions and stress, or those that must provide a completely dry internal environment, require a reliable, high performance waterproofing solution. Such a solution should also be engineered to include the protection of the concrete structure itself against the potentially harmful influences of sea water or aggressive natural gases in soil.

Nowadays basements and other below ground structures are required to accommodate increasingly demanding performance specifications, from living and leisure areas in the basements of residential properties to special technical facilities, services and sensitive storage areas in commercial buildings.

Sika provides the unique fully bonded, high flexible TPO membrane systems that can easily meet all of these stringent requirements, keeping new and existing basements structures durably and securely watertight. Due to its simple, fast and secure application, the unique SikaProof® A&P system can be used not only for new structures, but for the renovation of existing basements structures.

The SikaProof® membrane systems provide a dry environment to substructures with its key character, the "full bond". Not only does this protect the concrete structure, but the full bond between the membrane and concrete 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 45 years of global experience, gives basement owners, specifiers and contractors the highest level of confidence in achieving their objectives



TYPICAL APPLICATIONS

SIKAPROOF® A&P SYSTEMS can be used for new structures, the renovation of existing basements structures and for a variety of other increasingly demanding applications.



NEW BASEMENT STRUCTURES

The requirements of structural waterproofing for commercial or residential buildings are becoming 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 are becoming 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 optimised and so the precast industry is becoming increasingly significant. SikaProof A as a pre-applied system can be easily installed in the precast factory, providing a simple, time and cost optimised 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

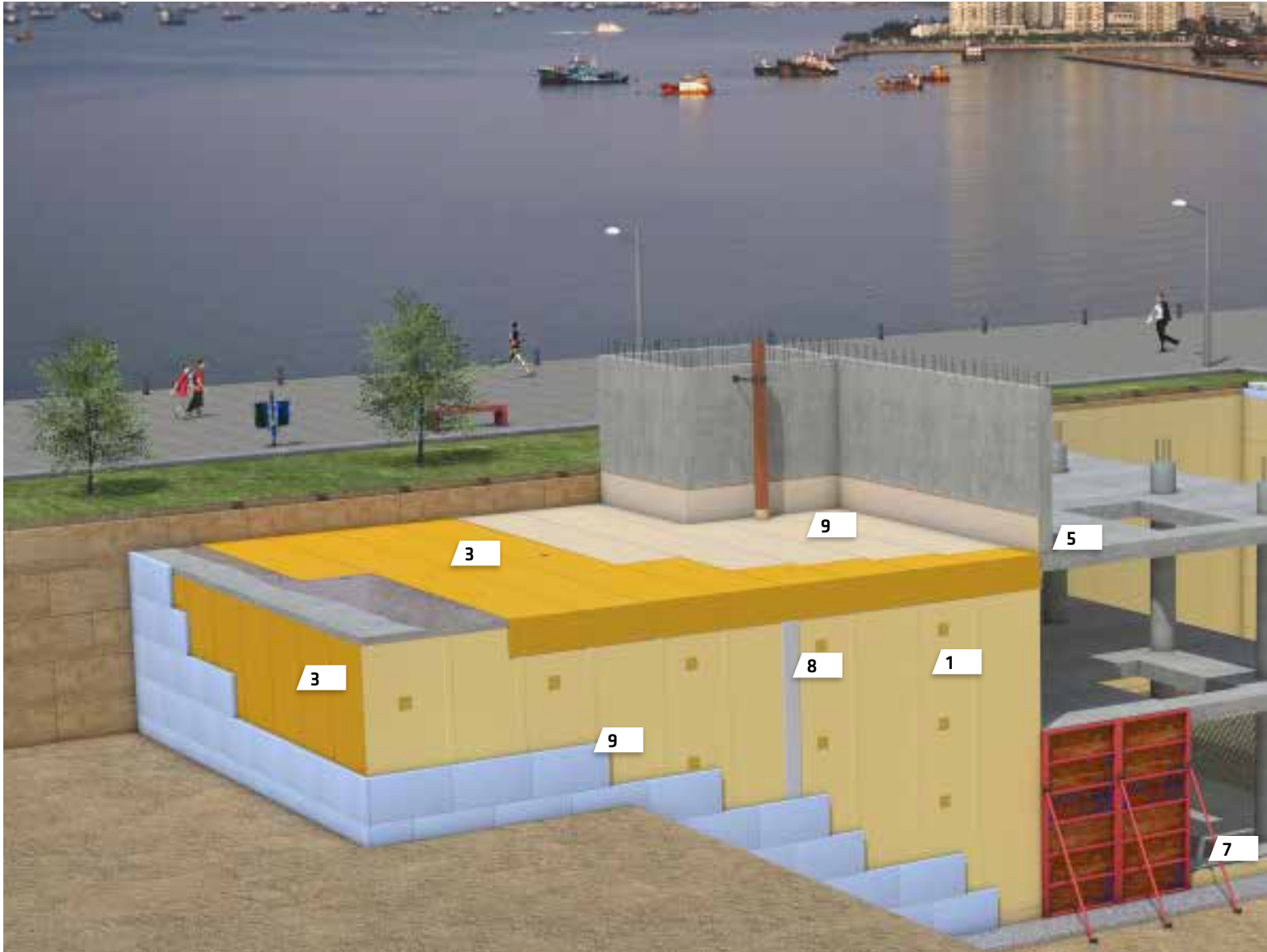


UNDERPASSES



SERVICE ROOMS

SikaProof® MEMBRANE SYSTEM – AN OVERVIEW

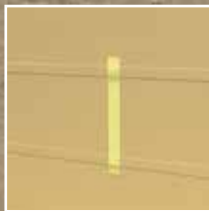


1



SikaProof® A, pre-applied membrane

2



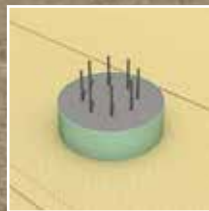
SikaProof® detailing tapes

3



SikaProof® P, post-applied membrane

4



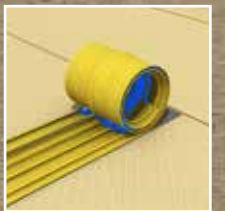
SikaProof® detailing solutions, e.g. for pile caps

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 means the membrane is installed in the formwork before the reinforcement and concrete is placed. The membrane sheets are available in 1.0 and 2.0 wide rolls with a prefabricated self-adhesive strip reducing joints and installation time, making installation more efficient, especially on large areas.

SikaProof® P the 'post-applied' system means the membrane system is installed on the hardened / existing concrete structure. To create a durable and enhanced full bond, it is necessary to use SikaProof® Primer-01 on 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 simply bonded with self-adhesive strips and tapes, making the system fast and secure to install. Sika also provides appropriate accessories to create proved solutions for all standard details.

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

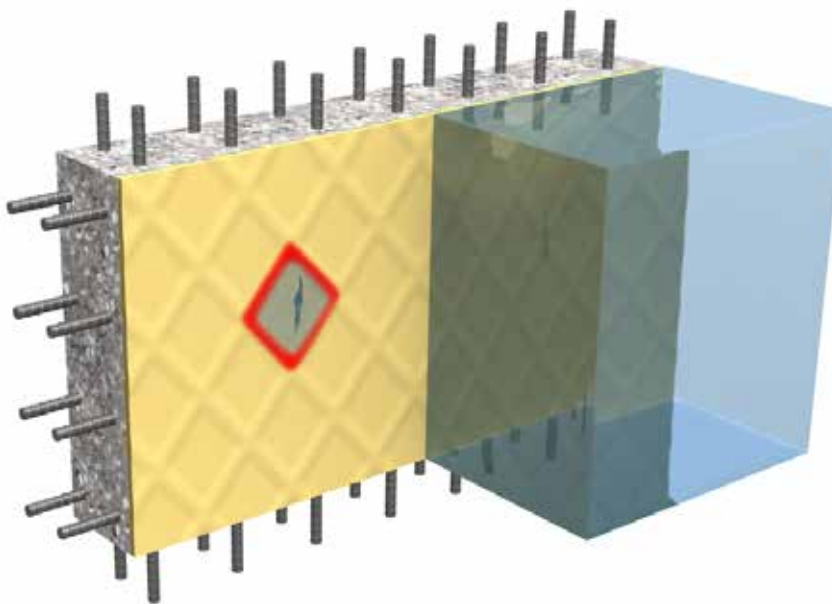
The SikaProof® systems can easily be combined with other compatible Sika Waterproofing solutions, such as Sika Joint Sealing Solutions, to design and create a complete solution for durable and cost-efficient watertight construction, whatever the requirements.

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, providing 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. As water is prevented from any further lateral under-flow between the membrane and the concrete structure, any water ingress is limited to the damaged area only. Due to its limited area, remedial work is simple and effective, as any damage can be easily repaired by a local injection.

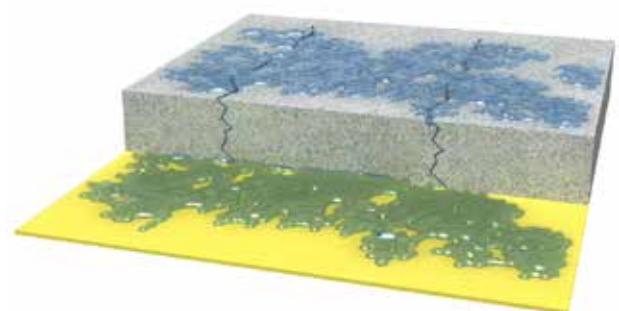
The key feature of "fully bonded" is common to both SikaProof® A&P, but this bond is not solely dependent on the membrane system; the correct concrete quality ensures the success of the fully bond system. This means the appropriate concrete mix design and the right workmanship are required to produce, 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 on-site technical services.



The "full 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 are 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?

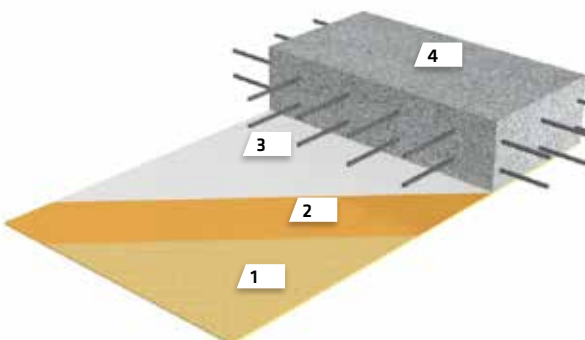
The pre-applied – SikaProof® A system, cast onto: the membrane system is installed in the formwork before the reinforcement and concrete are placed.

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: the self-adhesive membrane system is installed by peel & stick directly onto the hardened concrete surface.

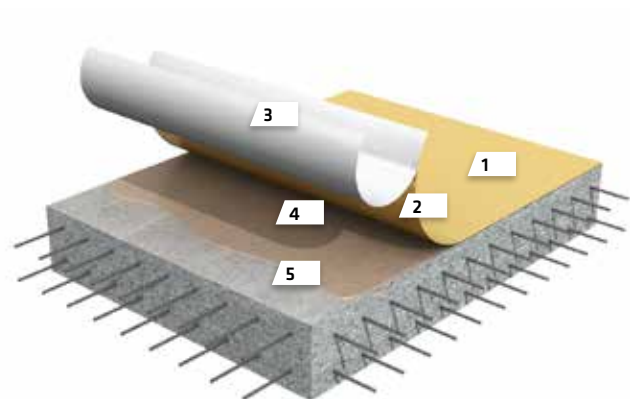
The bond to the surface is created and enhanced by the system primer to ensure a durable adhesion of the unique Sika adhesive sealant of the membrane system onto the existing concrete structure.



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
- Cost and time efficient 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 to supply customers with innovative, efficient and sustainable solutions with regards to 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 fewer costs
- Low carbon footprint
- Very environmentally friendly

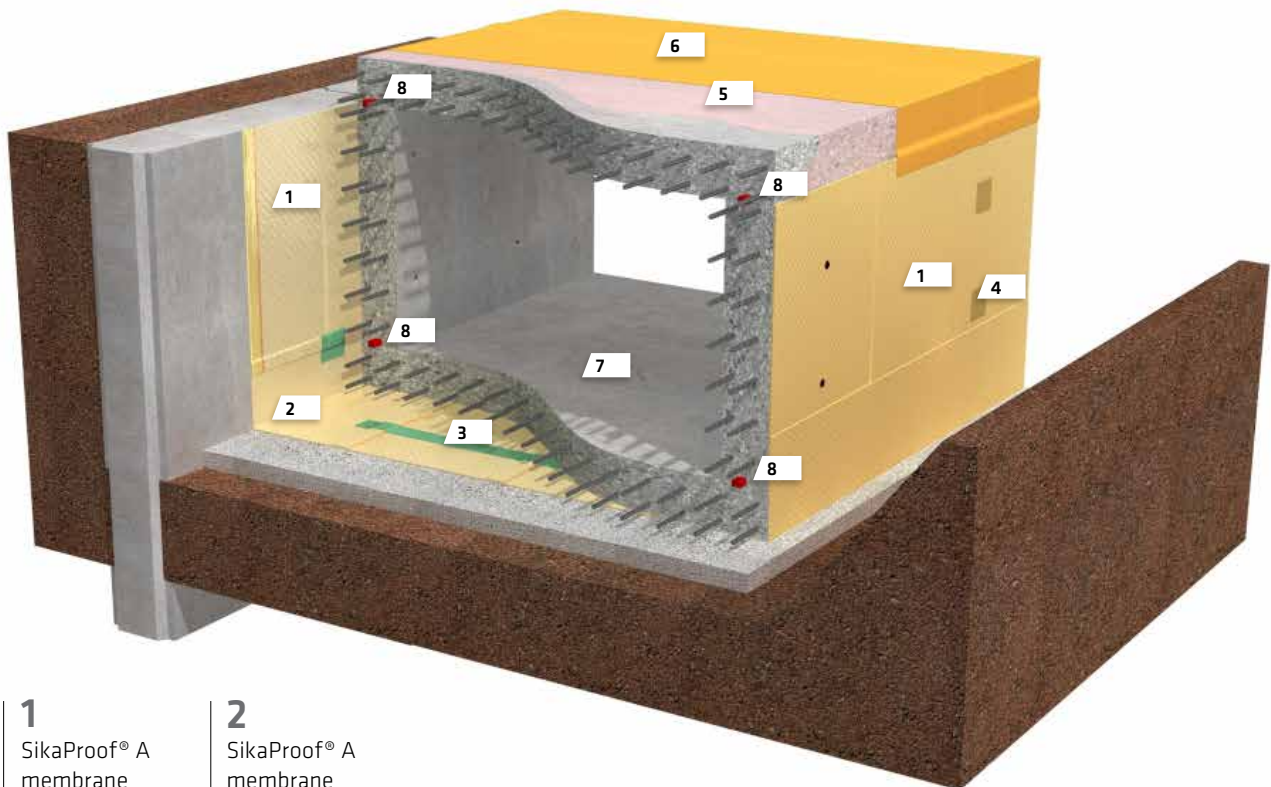


WHERE TO USE SikaProof® A&P?

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 membrane

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.

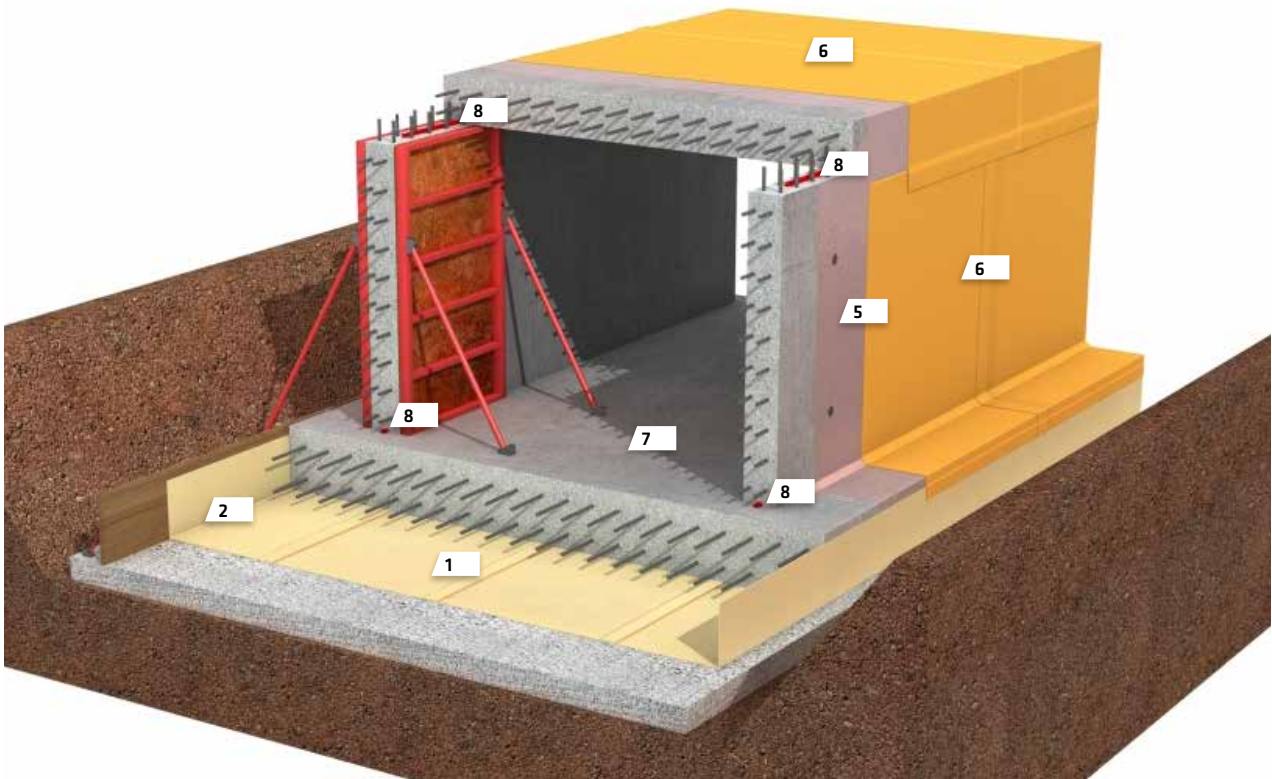


Open excavation with SikaProof® A, after removing the formwork the anchor penetrations has to be sealed.

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 HC 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 HC

Used for concrete protection and waterproofing

- SikaProof® A-08 HC
- SikaProof® A-12 HC

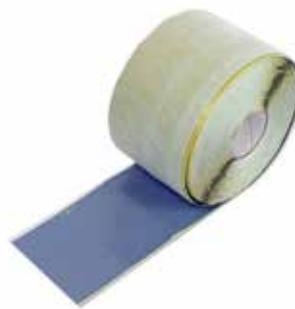


SikaProof® A membranes, 1.0 and 2.0 m width

SYSTEM COMPONENTS

Used together for sealing joints and create detail solutions within the system.

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



SikaProof® Tape-150 HC



SikaProof® ExTape-150 HC

ACCESSORIES

- SikaProof® Patch-200 B, external adhesive tape in 200 mm width based on the SikaProof® A membrane. Used to seal any penetrations, joints and any damage on the outside of the membrane surface.
- SikaProof® FixTape-50, double sided-adhesive tape in 50 mm width. Used to seal and fix/repair details within the system.



SikaProof® Patch-200 B



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 specially designed adhesive overlap edge and installation mark.

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

- SikaProof® P-12



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

Use for sealing joints of membrane overlaps or detailing:

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



COMPLEMENTARY WATERPROOFING SYSTEMS

THE SIKAPROOF® A&P SYSTEM requires additional joint sealing solutions for all construction expansion joints, as well for details and junctions, to create a secondary secure waterproofing barrier for joints.

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.



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.



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.



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 a stand-alone solution or in combination with 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 are spray-applied onto prepared and primed hardened concrete surfaces on the structure to achieve an optimal fully bonded system.



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.

Use for damp-proofing and waterproofing with low requirements:

- SikaBit® S-515

Use 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. Use 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

SIKA FULL RANGE SOLUTIONS FOR CONSTRUCTION:



WATERPROOFING



CONCRETE



REFURBISHMENT



SEALING AND BONDING



FLOORING



ROOFING

FOR SIKA GCC INFORMATION:



gcc.sika.com

WHO WE ARE

Sika AG, Switzerland, is a globally active specialty chemicals company. Sika supplies the building and construction industry as well as manufacturing industries (automotive, bus, truck, rail, solar and wind power plants, façades). Sika is a leader in processing materials used in sealing, bonding, damping, reinforcing and protecting loadbearing structures. Sika's product lines feature high quality concrete admixtures, specialty mortars, sealants and adhesives, damping and reinforcing materials, structural strengthening systems, industrial 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.



Sika UAE LLC
P.O. Box 126212
Dubai, UAE
T: +971 4 439 8200
F: +971 4 439 3606
info@ae.sika.com

Sika Saudi Arabia Co. Ltd
P.O. Box 58647, Riyadh 11583
Kingdom of Saudi Arabia
T: +966 11 2176532
F: +966 11 4193607
info@sa.sika.com

Sika International Chemicals LLC
P.O. Box 55172
Abu Dhabi, UAE
T: +971 2 643 0364
F: +971 2 676 0840
info@ae.sika.com

Sika Gulf B.S.C.
P.O. Box 15776
Adliya, Bahrain
T: +973 17 738 188
F: +971 17 732 476
info@bh.sika.com

Sika Qatar LLC
P.O.Box 201847
Doha, Qatar
T: +974 40163366
F: +974 40163370
sika.qatar@bh.sika.com

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