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 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+ and 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 full surface bond. It protects the concrete structure, as well as builds up the full surface bond together with the concrete and prevents lateral water migration between the concrete structure and the membrane system, in the event of a damage to the membrane.

The high reliability and watertight protection achieved with the SikaProof® systems combined with the global experience of more than 50 years, gives basement owners, specifiers and contractors the highest level of confidence in achieving their objectives.

TYPICAL APPLICATIONS

SikaProof® A+ AND P SYSTEM can be used for new structures as well as for the renovation of existing basements structures and for a variety of other applications with demanding requirements.

NEW BASEMENT STRUCTURES

The requirements of structural waterproofing of commercial and residential buildings are becoming more demanding. The unique fully bonded SikaProof® A+ and P systems provide a durable and cost effective solution with a long service life.

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 reliability.

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 in the precast factory, that provides a simple, fast 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 solutions, e.g. for pile caps

3

Sika Waterbar®, joint waterproofing

4

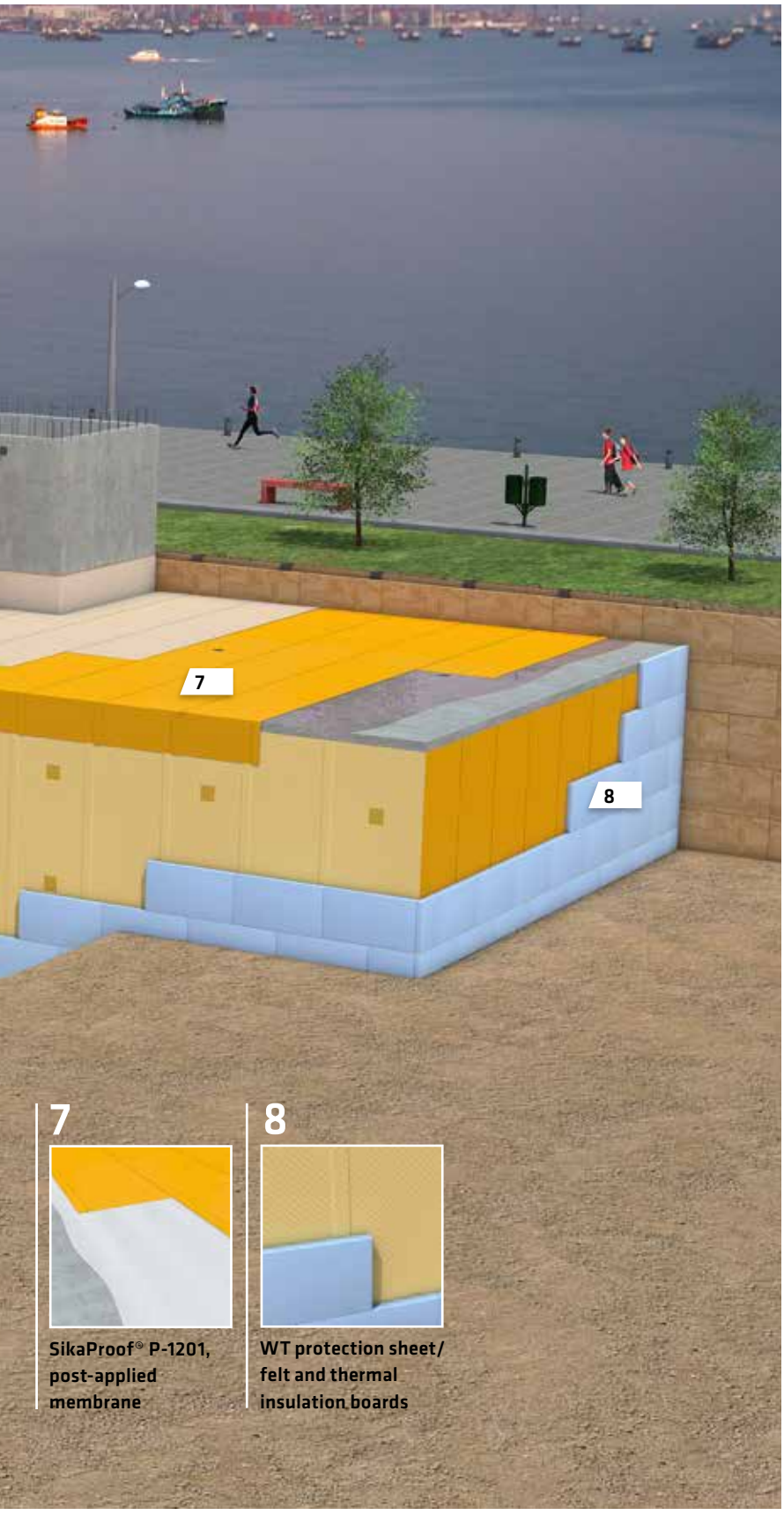
SikaFuko® VT injection hose

5

SikaSwell® A joint waterproofing profiles

6

Sikadur Combiflex® SG System



7

SikaProof® P-1201, post-applied membrane

8

WT protection sheet/ felt and thermal insulation boards

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

SikaProof® A+ pre-applied system is installed in the formwork before the reinforcement is placed and concrete is cast. The membrane sheets are available in 1.0 m and 2.0 m wide rolls. The unique hybrid bonding layer forms a dual bond with concrete to provide a watertight basement structure.

SikaProof® P post-applied system is installed on the hardened / existing concrete structure.

- **SikaProof® P-12 self-adhesive peel and stick system**
  The SikaProof® P-12 membrane sheets are installed by peeling the release liner and sticking the membrane onto the prepared and primered concrete wall. The SikaProof® Primer-01 is applied onto the prepared concrete surface to enhance the durable and full-surface bond between the membrane and concrete.
- **SikaProof® P-1201 in-situ adhered system**
  The applied SikaProof® Adhesive-01 is used to create a durable full-surface bond between the prepared concrete surface and the directly installed SikaProof® P-1200 membrane sheets.

The entire system can be cold applied using self-adhesive tapes or applied with thermal jointing, where the overlap joints are connected with a heating device. The details are the key, therefore Sika provides appropriate accessories to create proved detail solutions for all standard details.

SikaProof® system is an efficient solution for basement waterproofing, engineered waterproofing of new and existing basements and below ground structures.

The SikaProof® system 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, for all requirements.

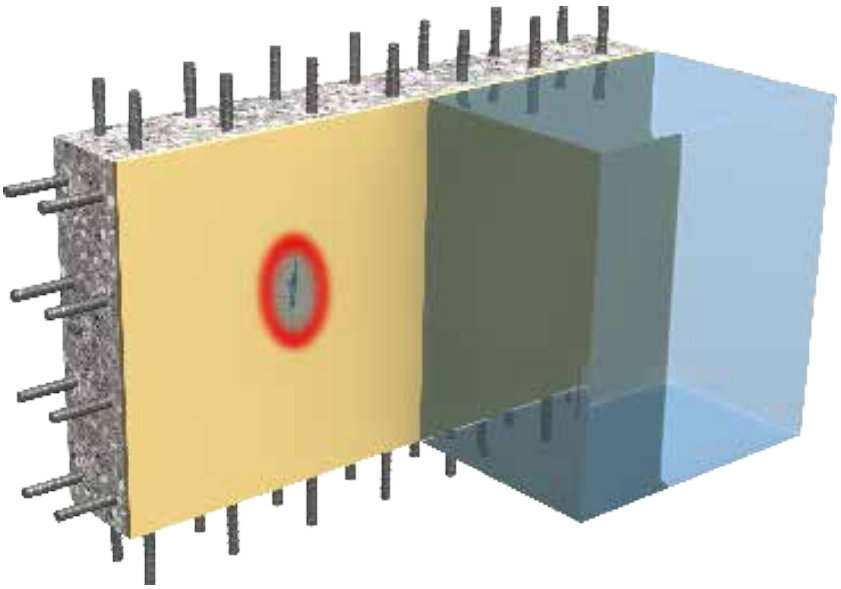
THE FULLY BONDED TECHNOLOGY

FULLY BONDED – WHAT DOES IT MEAN ...

The fully bonded technology was developed from Sika's elastic sealant and adhesive bonding expertise. The innovation provides a durable and reliable bond between the membrane system and the structural concrete. This property provides high safety and longterm watertight solution, especially in the event of damage to the membrane.

Any water ingress is limited to the damaged area and the water is prevented from lateral migration between the membrane and the concrete structure. That makes the repair by local injection of damaged areas simple and effective, due to its locally limited area.

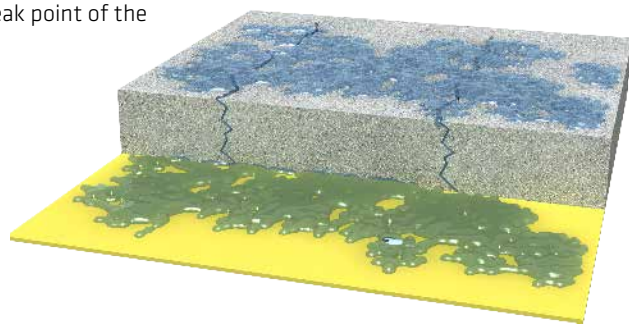
The key feature of "the fully bonded technology" is the same in both SikaProof® A+ and P and this bond is not only dependent on the membrane system. The appropriate concrete quality ensures the success of the fully bonded system. For this purpose concrete mix design and the workmanship have to be planned and executed precisely. Sika provides a wide range of concrete admixtures and technologies to help achieve the required concrete quality with the "Sika Mix Design Tool" and the technical services on site.



The "fully bonded technology" has been tested and approved in function tests according to ASTM and EN standards. Therefore the bonded membrane in combination with concrete is tested regarding the resistance to lateral water migration under a defined waterpressure over a specific periode.

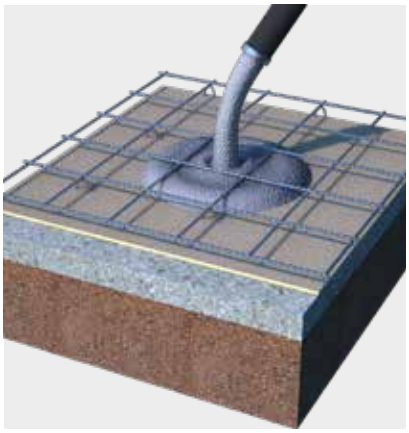
The SikaProof® fully bonded system limits any water ingress / leakage of the structure on a local area in the event of a damage to the membrane (see above picture).

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

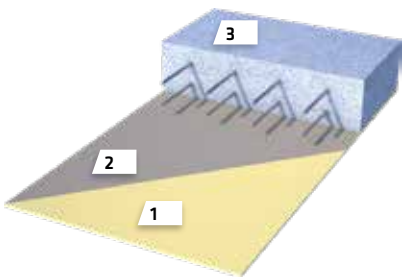


... AND HOW DOES IT WORK?

The pre-applied SikaProof® A+ system is installed in the formwork before the reinforcement is placed, and the structural concrete is cast. The fresh concrete is cast onto the membrane and covers the surface of the hybrid bonding layer to form the dual bond.

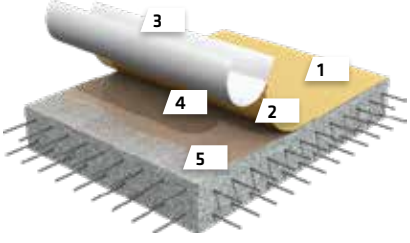


THE SYSTEM BUILD-UP:
SikaProof® A+ consists of a flexible polyolefin (FPO) membrane (1) with a thickness of 1.2 mm or 0.8 mm containing a unique, FPO based, hybrid bonding layer (2) to give total membrane thickness of 1.75 mm or 1.35 mm. The structural concrete (3), which is determined according to the Sika Concrete Mix Design, creates the ideal dual bond.



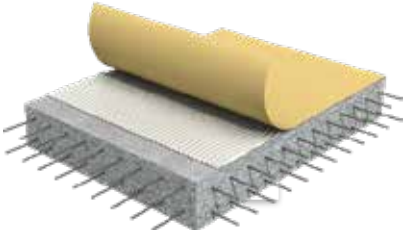
The post-applied SikaProof® P-12 system is installed by first peeling the release liner and sticking the membrane directly onto the hardened concrete surface. The full-surface bond to concrete is enhanced by the system primer, which ensures a durable adhesion to the concrete structure.

THE SYSTEM BUILD-UP:
SikaProof® P-12 is based on a flexible 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 liner (3). The hardened structural concrete substrate (5) is prepared and primed with SikaProof® Primer-01 (4).



The post-applied SikaProof®P-1201 system, the membrane is installed into the freshly applied adhesive onto the prepared hardened concrete surface. There is no primer required, the full-surface and highly durable bond to concrete structure is created by the adhesive.

THE SYSTEM BUILD-UP:
SikaProof®P-1201 system consists of a flexible FPO membrane SikaProof P-1200 (1) based on Sikaplan®technology available in thickness 1.2 mm. The SikaProof P-1200 membrane (1) is installed onto the freshly applied SikaProof Adhesive-01 (2) onto the prepared hardened structural concrete substrate (3).



ADVANTAGES AND BENEFITS

FPO MEMBRANE

The SikaProof® is based on proven FPO Sikaplan membrane used in tunneling and known for more than 50 years all around the world.

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.

BENEFITS:
- High crack-bridging capability
- High durability and reliability
- High protection of living areas against environmental influences

FULLY BONDED SYSTEM

The fully bonded technology is the back-up fo the SikaProof® system in the event of a damage to the membrane, which is the primary waterproofing layer.

ADVANTAGES:
- No lateral water migration
- Limiting the water ingress / leakage of the basement
- Can be easily and efficiently repaired by using local resin injections.

BENEFITS:
- High reliability and system safety
- Reduction of time and cost in remedial work

ADHERED OR THERMAL JOINTING

SikaProof® A+ and P systems are adhered or thermally jointed together using adhesive tapes or heating equipment.

ADVANTAGES:
- Easy and fast installation

BENEFITS:
- High time and cost efficiency due to the very easy and fast installation, especially for complex structures.

SWISS ENGINEERING

The SikaProof® system is engineered and developed in Switzerland with the intention to offer a complete waterproofing solution to the known high Swiss quality.

ADVANTAGES:
- Global know-how within Sika utilized to innovate high quality products
- Collection of global customer needs and focus on a product development close to application

BENEFITS:
- One system for all global climate conditions
- Simple and fast system in application
- Sika technology leadership ensures durable and reliable quality

COMPLETE SOLUTION

Sika has over 100 years of experience 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
- Tested and approved detailing solutions

BENEFIT:
- High compatibility, reliability and system safety
- Everything from one supplier
- Direct 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.

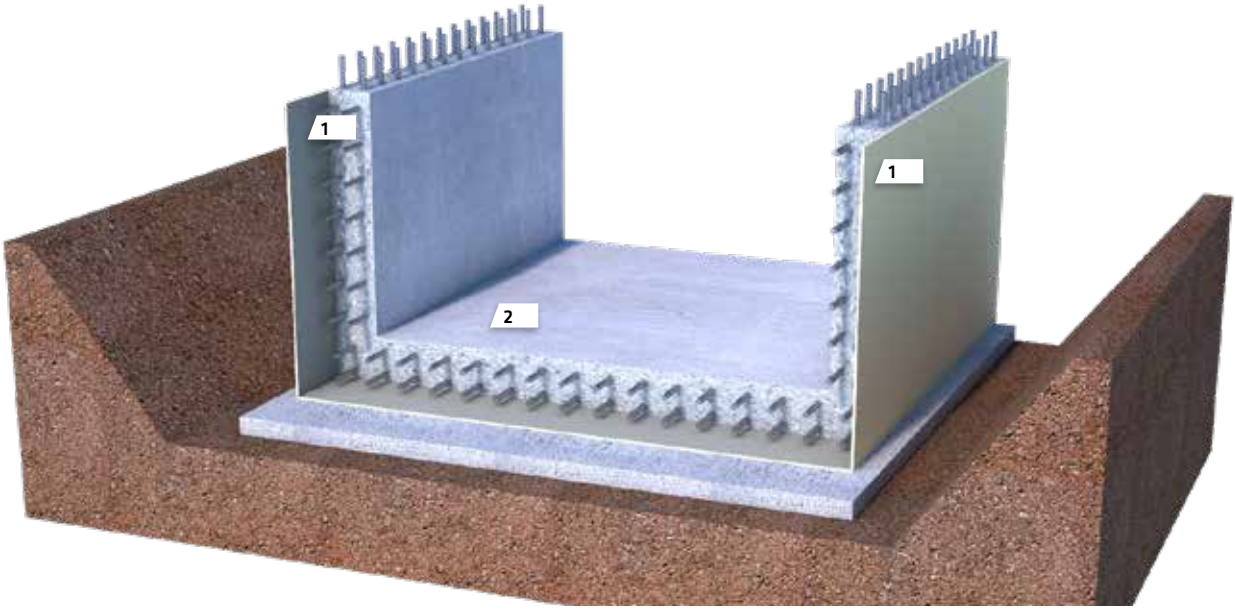
ADVANTAGES:
- Highly low amount of wastage
- No open-torch or flame
- No segregation, washing-out or leaching

BENEFIT:
- Less waste and less cost
- Low carbon f ootprint
- Highly eco-friendly

WHERE TO USE SikaProof® A+ and P?

SikaProof® A+, PRE-APPLIED WATERPROOFING SYSTEM

As a pre-applied solution, the SikaProof® A+ membrane system can be applied on 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 inside of the external shuttering when using double-faced formwork in open-cut excavation. Formwork in open-cut excavation. In this type of projects, the shuttering anchor / tie-bar penetrations have to be sealed after removing the formwork.



1
SikaProof® A+ system

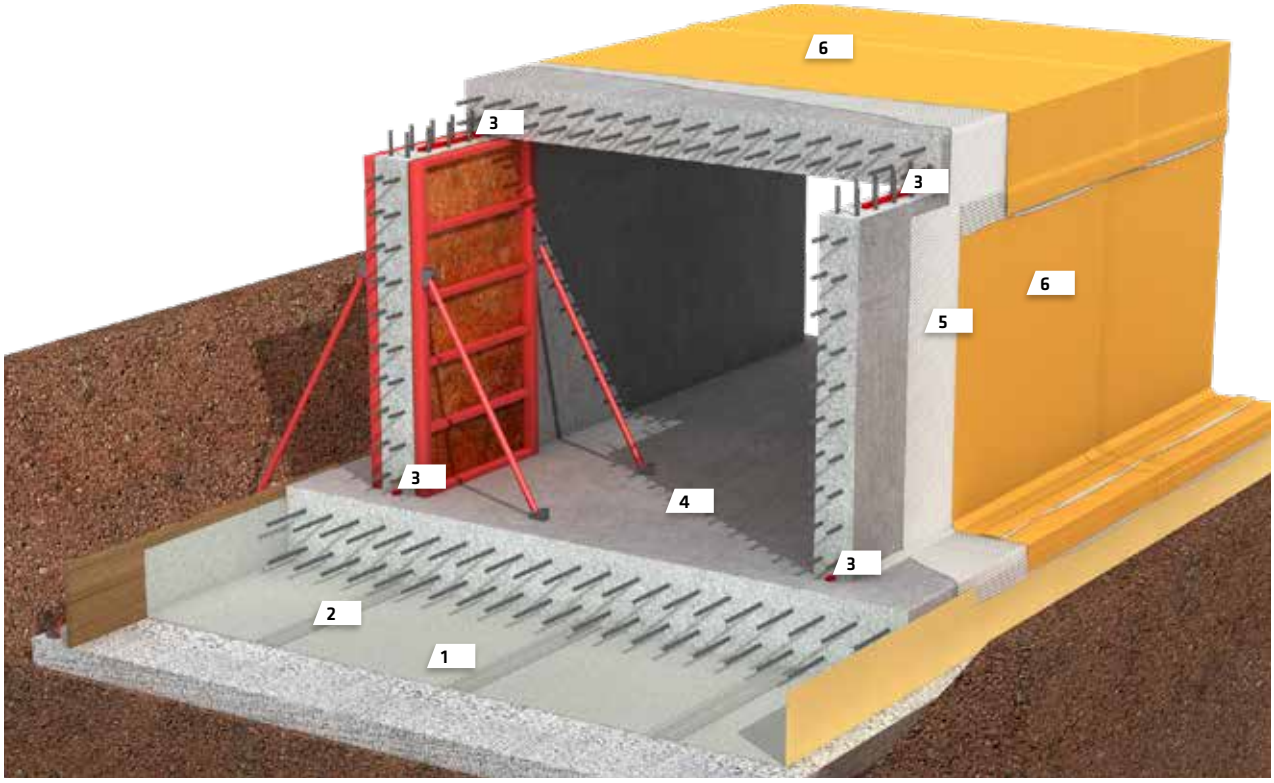
2
Sika® Watertight Concrete

Typical application of SikaProof® A+ on base slab.

Open excavation with SikaProof® A+: After removing the formwork, the anchor penetrations have to be sealed.

SikaProof® P, POST-APPLIED WATERPROOFING SYSTEM

The SikaProof® P system can be applied on existing prepared concrete structures, in open excavations on vertical walls and horizontal areas, e.g. protrusion/junction. In this application, the shuttering anchor penetrations will be sealed in one step with the membrane over the entire area.



1 SikaProof® A+ membrane

2 SikaProof® Tape A+

3 Joint solution, SikaSwell® A&S-2

4 Sika® Watertight Concrete

5 SikaProof® Adhesive-01

6 SikaProof® P-1200 membrane

Open excavation with protrusion slab to wall: The complete structure is sealed with SikaProof® P.

For open excavations: The protection of the SikaProof® membrane is mandatory, especially regarding the backfilling.

SikaProof® SYSTEM COMPONENTS

PRE-APPLIED SYSTEM

SikaProof® A+ MEMBRANES

Used for concrete protection and waterproofing
- SikaProof® A+ 12
- SikaProof® A+ 08

SikaProof® A+ membranes, 1.0 and 2.0 m width

SYSTEM COMPONENTS

Used for sealing overlap joints and create detail solutions with in the system.
- SikaProof® Tape A+, internal adhesive tape for internal jointing and detailing
- SikaProof® Sandwich Tape, double-sided adhesive for alternative jointing

SikaProof® Tape A+

SikaProof® Sandwich Tape

ACCESSORIES
- 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® Patch-200 B

SikaProof® FixTape-50

POST-APPLIED SYSTEMS

SikaProof® P-12 peel & stick system

The system consists of the following components:

- SikaProof® P-12
  The self-adhesive membrane is available in 1.0 m width, easy to handle, with a special designed adhesive overlap edge and installation mark.
  Used for concrete protection, damp- and waterproofing application with low requirements.

- SikaProof® Primer-01
  The primer is used to enhance the bonding capability between the membrane and concrete. It is a single component, solvent dispersed primer available in 5 kg and 12.5 kg metal pails.

SikaProof® P-12 membrane with special edge design

SikaProof® Primer-01

SikaProof® P-1201 in-situ adhered system

The system consists of the following components:

- SikaProof® P-1200
  The membrane is available in 1.0 and 2.0 m width, with an installation mark.
  Used for concrete protection, damp- and waterproofing application with high requirements.

- SikaProof® Adhesive-01
  The two component adhesive is used to create the full-surface bond.
  – Component A, 25 kg pail
  – Component B, 5 kg pail

SikaProof® P-1200 membrane

SikaProof® Adhesive-01, Component A+B

Accessories

Used for sealing joints of membrane overlaps or for detailing:
– SikaProof® ExTape-150

SikaProof® ExTape-150

COMPLEMENTARY WATERPROOFING SYSTEMS

THE SikaProof® A+ AND P SYSTEM requires 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.

SikaSwell® SWELLABLE PRODUCTS
The efficient solution for construction joints and complementary sealing of penetrations provides an additional line of protection against water ingress. Use the full range of hydrophilic (swellable) profiles, rings, and gun applied sealants.

Sika Waterbar®
Waterbars are the most commont joint sealing solution for construction joints and are mandatory for expansion joints. The appropriate profile according to a project requirements can be chosen from the wide Sika Waterbar® range.

SikaFuko® INJECTION HOSES SYSTEM
Typically used as secondary or complementary back-up system to seal construction, movement joints or connection joints (e.g. diaphragm walls) and for details 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 ideal solution for construction and expansion joints, in particular to seal joints of precast constructions.

ALTERNATIVE POST-APPLIED fully bonded membrane waterproofing systems for basements and other below structures that are used as stand alone 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 are spray-applied onto prepared and primered concrete surfaces 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 specially 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 containing a total thickness of 1.5 mm. The self-adhesive sheets are applied onto the prepared and primered concrete structure to get an optimal full-surface bond.

Used for damp-proofing and waterproofing with low requirements:

- SikaBit® S-515

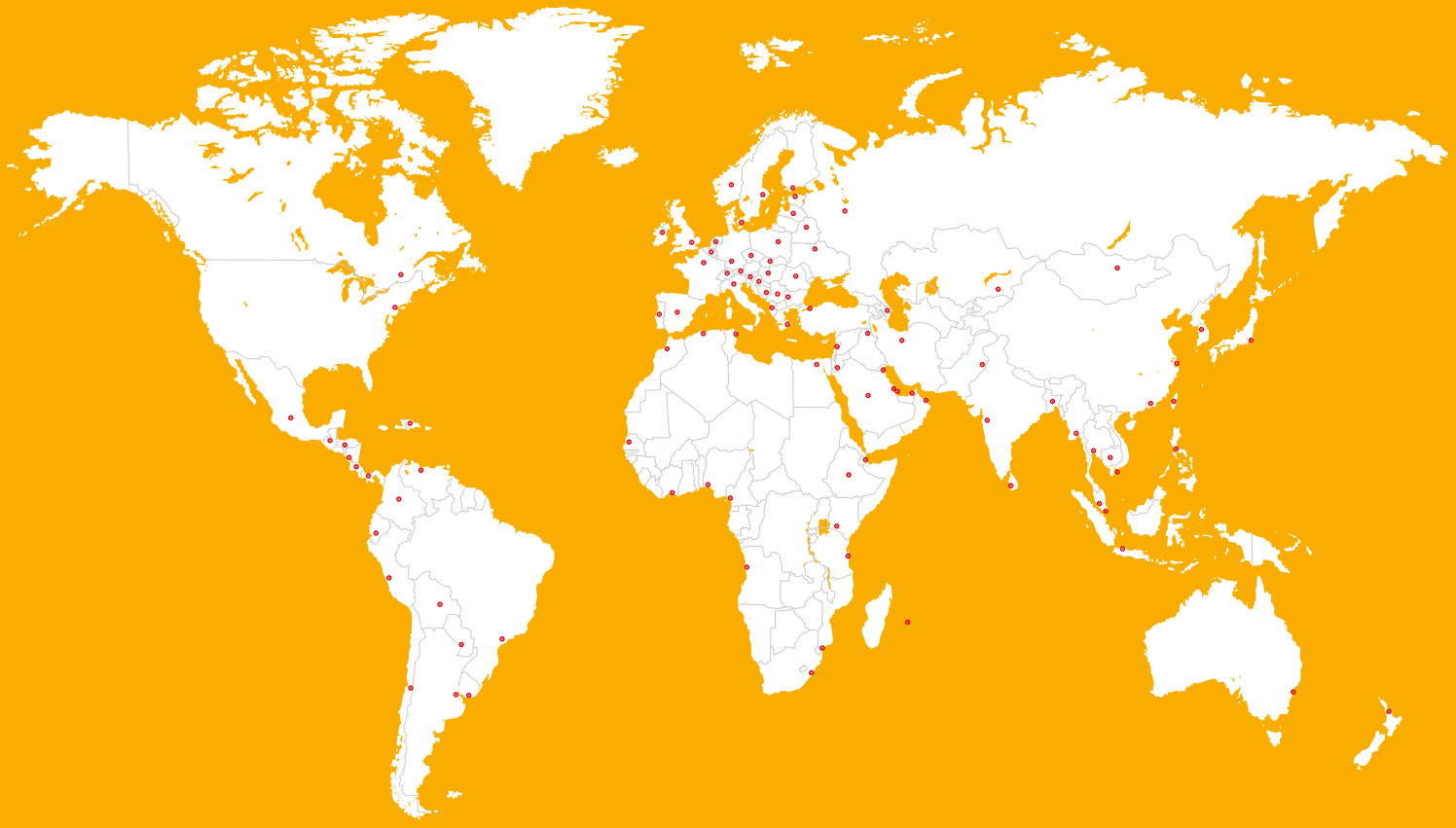
Use the system primers to enhance the bonding capability between the membrane and concrete.

- SikaProof® Primer-01, is a single component, solvent dispersed primer available in 5 kg and 12.5 kg metal pails.

SikaBit® S-515 Membrane

SikaProof® Primer-01

GLOBAL BUT LOCAL PARTNERSHIP



FOR MORE WATERPROOFING 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.

Certified Quality System ISO 9001/EN 29001 since 1986
Certified Management System ISO 14001 since 1997
USGBC MEMBER

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