



WATERPROOFING

SikaProof® FULLY BONDED MEMBRANE SYSTEMS FOR WATERTIGHT BASEMENTS

TECHNOLOGY & SYSTEMS

BUILDING TRUST



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 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 durable 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 their simple, fast and secure application the unique SikaProof® A+ and P systems can be used not only for new structures, but also for the renovation of existing basement structures.

The unique fully bonded SikaProof® membrane systems provide this high level of dry environment with their key characteristic being the full surface bond. It protects the concrete structure, as well as builds up full surface bond together with the concrete to prevent lateral water migration between the concrete structure and the membrane system, in the event of 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 SYSTEMS can be used for new structures as well as for the renovation of



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

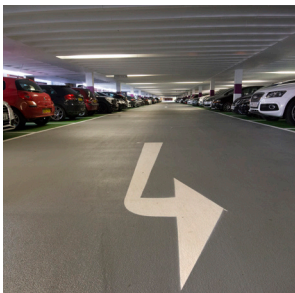
“Tank in a Tank” refurbishment of existing leaking basements becomes more important. SikaProof® A+ as a pre-applied fully bonded system provides a simple, cost-effective solution with high durability and reliability.



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, which provides a simple, fast and cost-optimised solution.

USED FOR DRY BASEMENTS IN COMMERCIAL AND RESIDENTIAL BUILDINGS



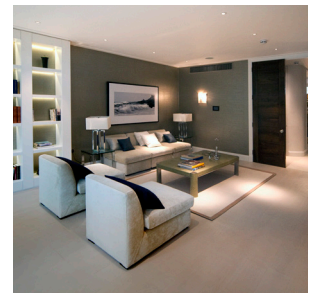
CAR PARKS



ARCHIVES



TECHNICAL ROOMS



LIVING AREAS

AND WATERTIGHT BASEMENTS AND BELOW GROUND STRUCTURES



LEISURE FACILITIES



METRO STATIONS

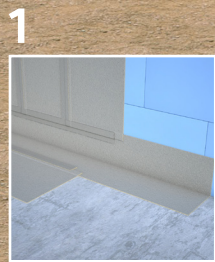
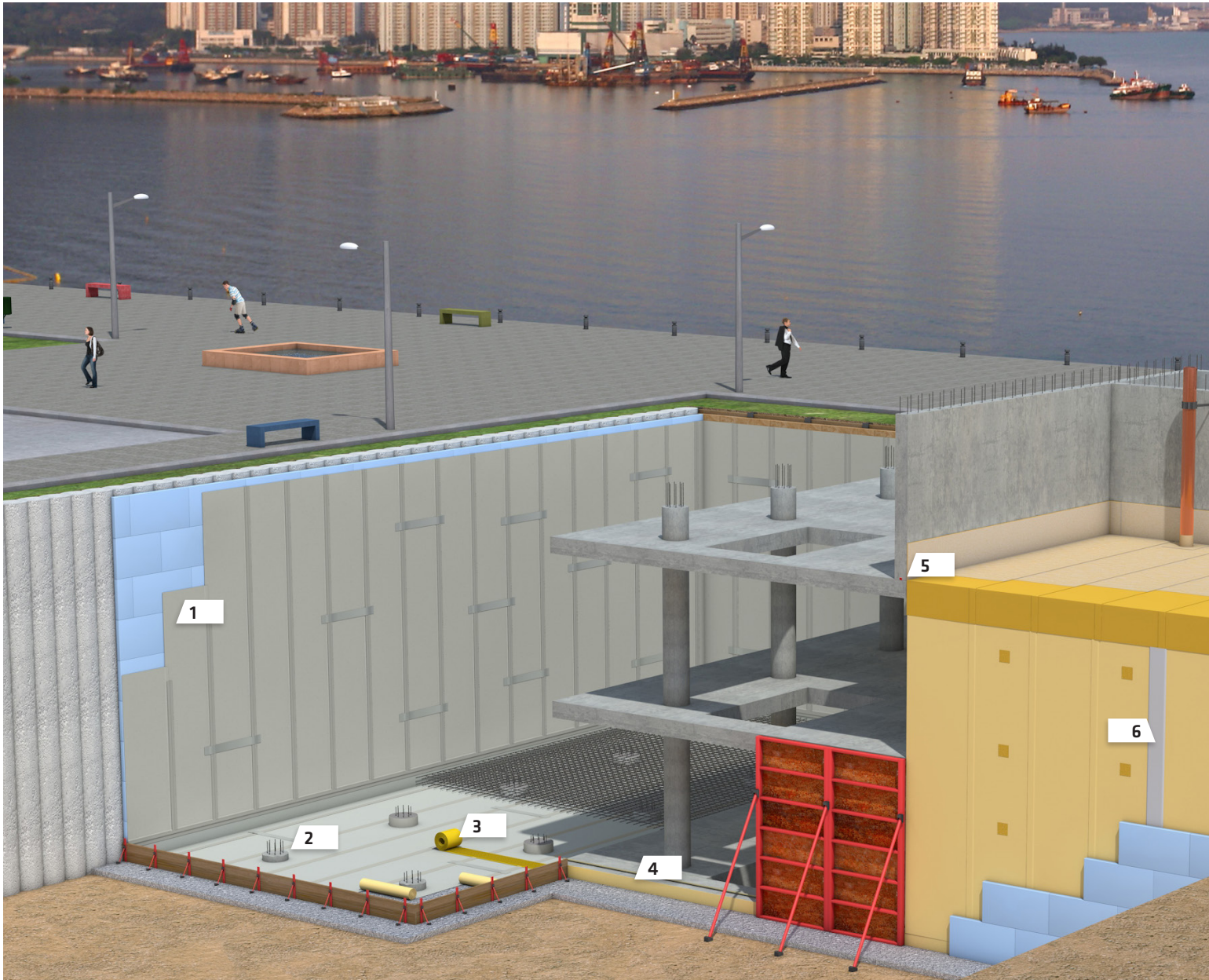


UNDERPASSES

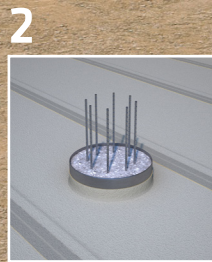


SERVICE ROOMS

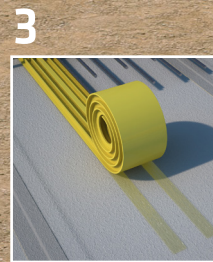
SikaProof® MEMBRANE SYSTEM – AN OVERVIEW



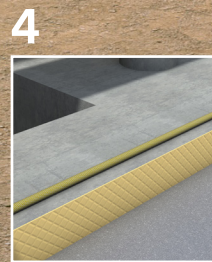
1
SikaProof® A+ pre-applied membrane



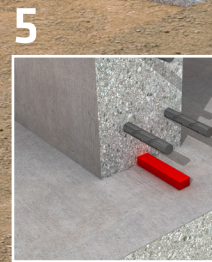
2
SikaProof® detailing solutions, e.g. for pile caps



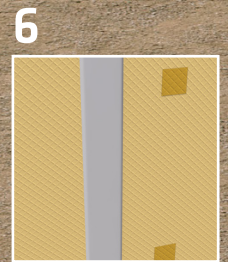
3
Sika Waterbar®, joint waterproofing



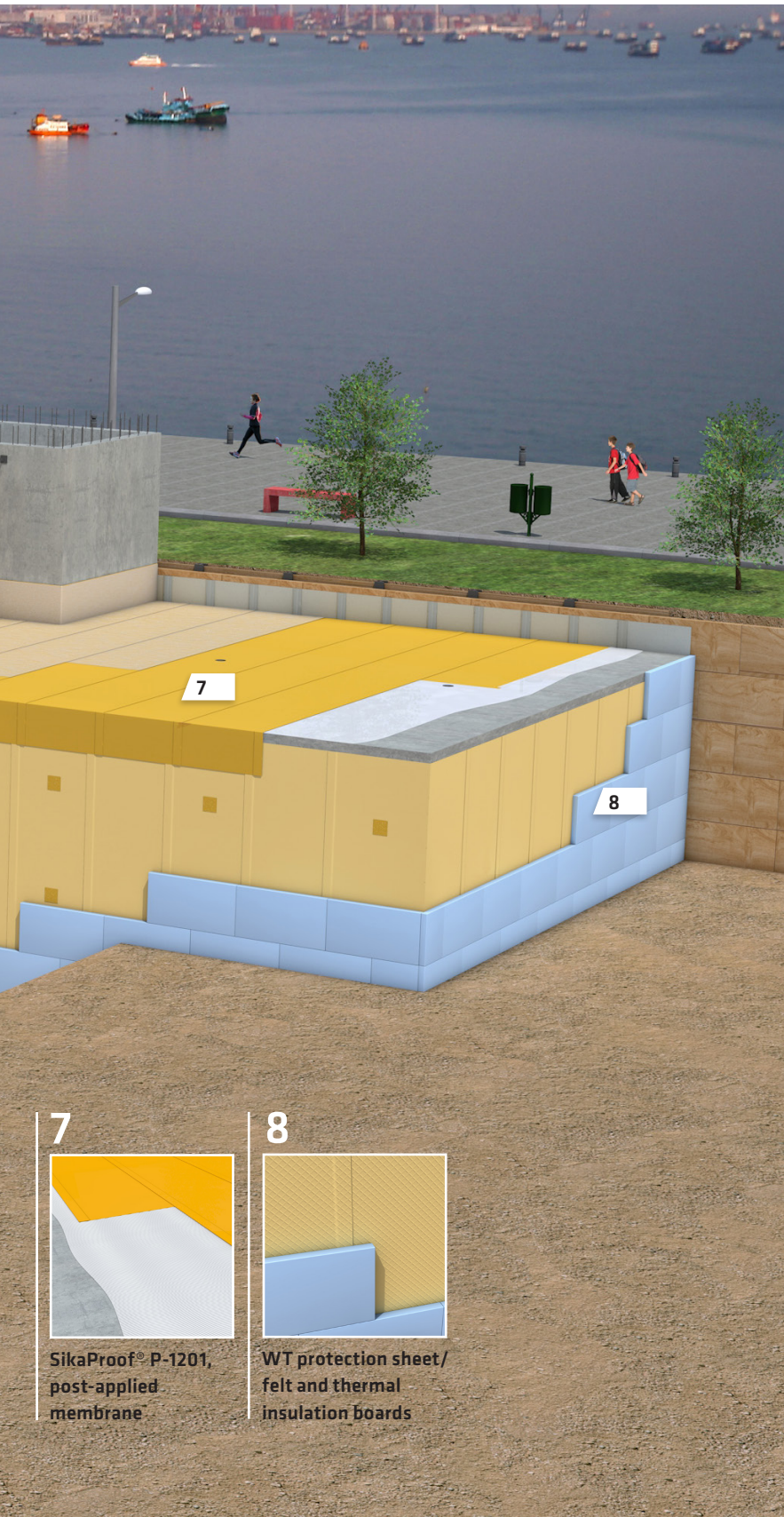
4
SikaFuko® VT injection hose



5
SikaSwell® A joint waterproofing profiles



6
Sikadur Combiflex® SG System



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 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 primed 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.

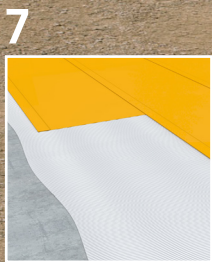
SikaProof® P-1201 in-situ adhered system

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.

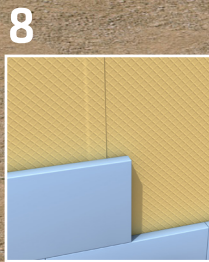
The entire system can be cold applied using self-adhesive tapes or applied with thermal jointing, where the overlap joints are connected with a heating device. The details are the key, therefore Sika provides appropriate accessories to create proven detail solutions for all standard details.

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.



7
SikaProof® P-1201,
post-applied
membrane



8
WT protection sheet/
felt and thermal
insulation boards

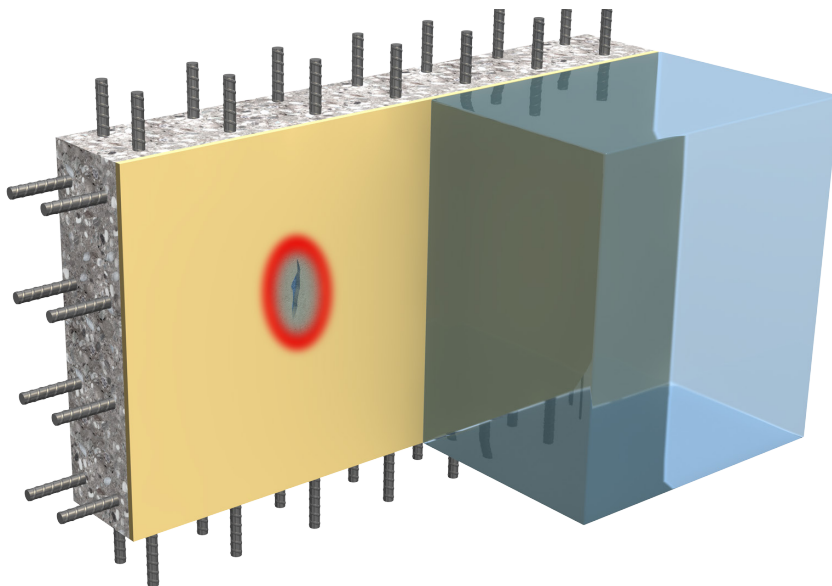
THE FULLY BONDED TECHNOLOGY

FULLY BONDED – WHAT DOES IT MEAN?

The fully bonded technology was developed from Sika's elastic sealant and adhesive bonding expertise. The innovation provides a durable and reliable bond between the membrane system and the structural concrete. This property provides high safety and a long-term 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 limited area.

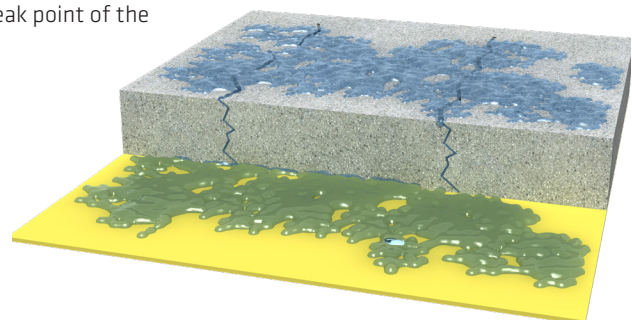
The key feature of "the fully bonded technology" is the same in both SikaProof® A+ and P and this bond is not only dependent on the membrane system. The appropriate concrete quality ensures the success of the fully bonded system. For this purpose concrete mix design and the workmanship have to be planned 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 water pressure over a specific period.

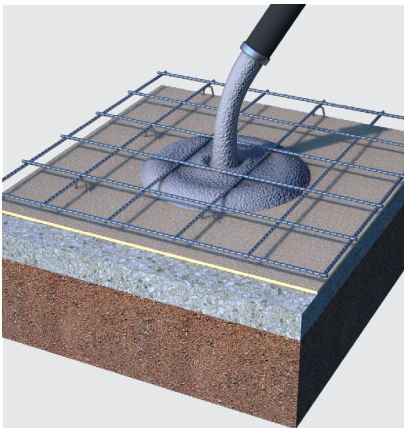
The SikaProof® fully bonded system limits any water ingress / leakage of the structure on a local area in the event of damage to the membrane (see above picture).

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 structure, such as joints and cracks.



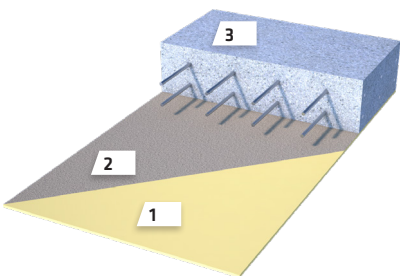
... AND HOW DOES IT WORK?

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 containing a unique, FPO based, hybrid bonding layer (2) to give total membrane thickness of 1.75 mm. The structural concrete (3), which is determined according to the Sika Concrete Mix Design, creates the ideal dual bond.

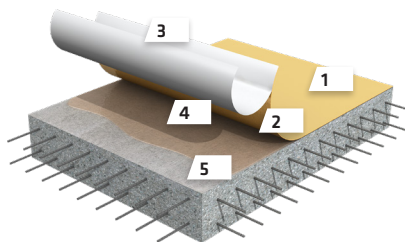


The post-applied SikaProof® P-12 system is installed by first peeling the release liner and sticking the membrane directly onto the hardened concrete surface. The full-surface bond to concrete is enhanced by the system primer, which ensures a durable adhesion to the concrete structure.



THE SYSTEM BUILD-UP:

SikaProof® P-12 is based on a flexible FPO membrane (1) based on Sikaplan® technology with a thickness of 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).



ADVANTAGES AND BENEFITS

FPO MEMBRANE

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

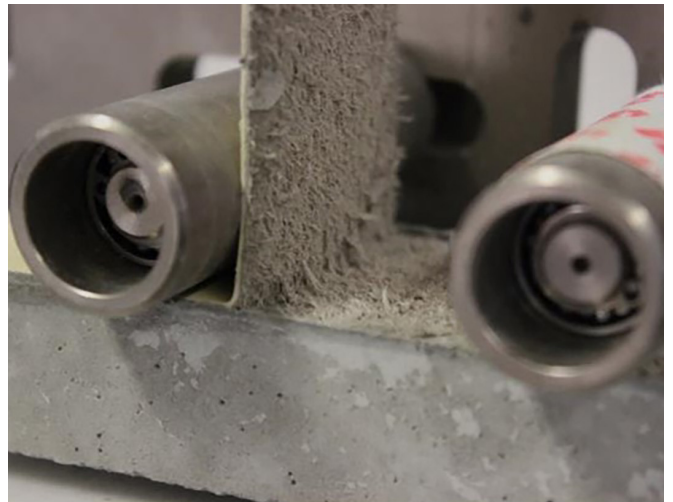
The fully bonded technology is the back-up for the SikaProof® system in the event of damage to the membrane, which is the primary waterproofing layer.

ADVANTAGES:

- No lateral water migration
- Limiting the water ingress / leakage of the basement
- Can be easily and efficiently repaired by using localised 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

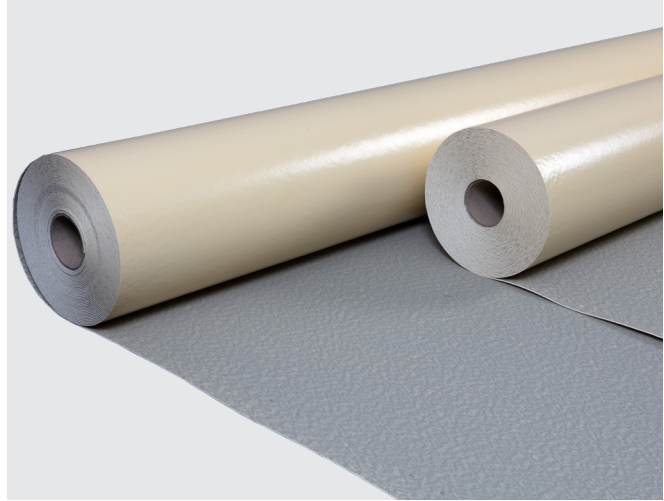
The SikaProof® system is engineered and developed in Switzerland with the intention to offer a complete waterproofing solution to the known high Swiss quality.

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:

- Low amount of wastage
- No open-torch or flame
- No segregation, washing-out or leaching

BENEFIT:

- Less waste and less cost
- Low carbon footprint
- Highly eco-friendly

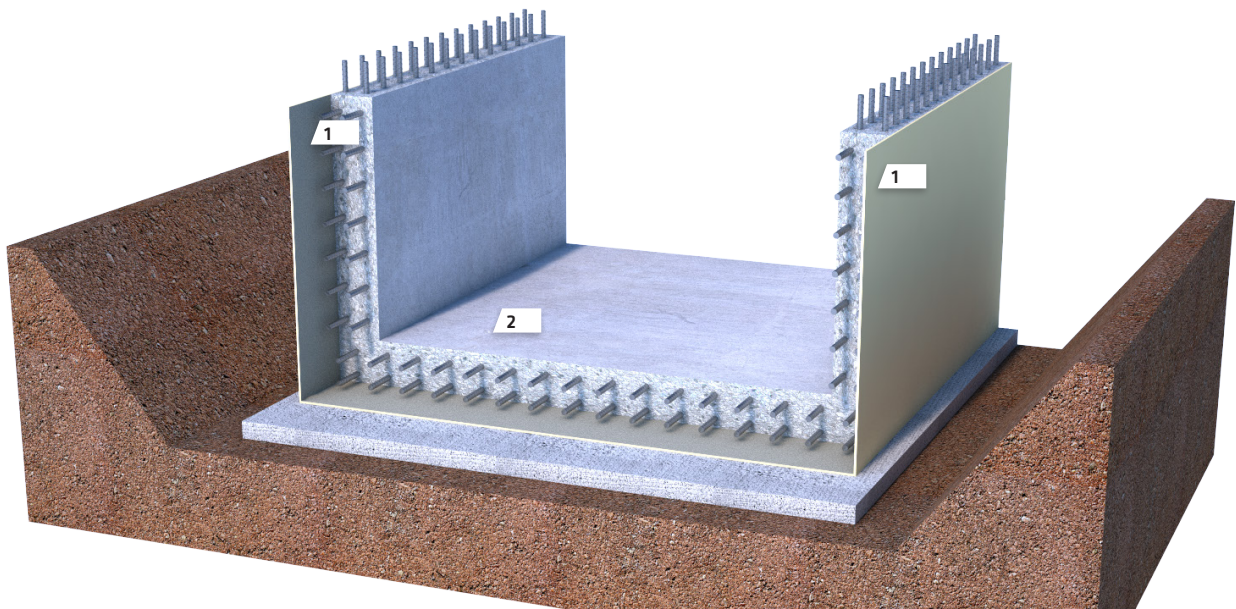


WHERE TO USE SikaProof® A+ and P?

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. 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.

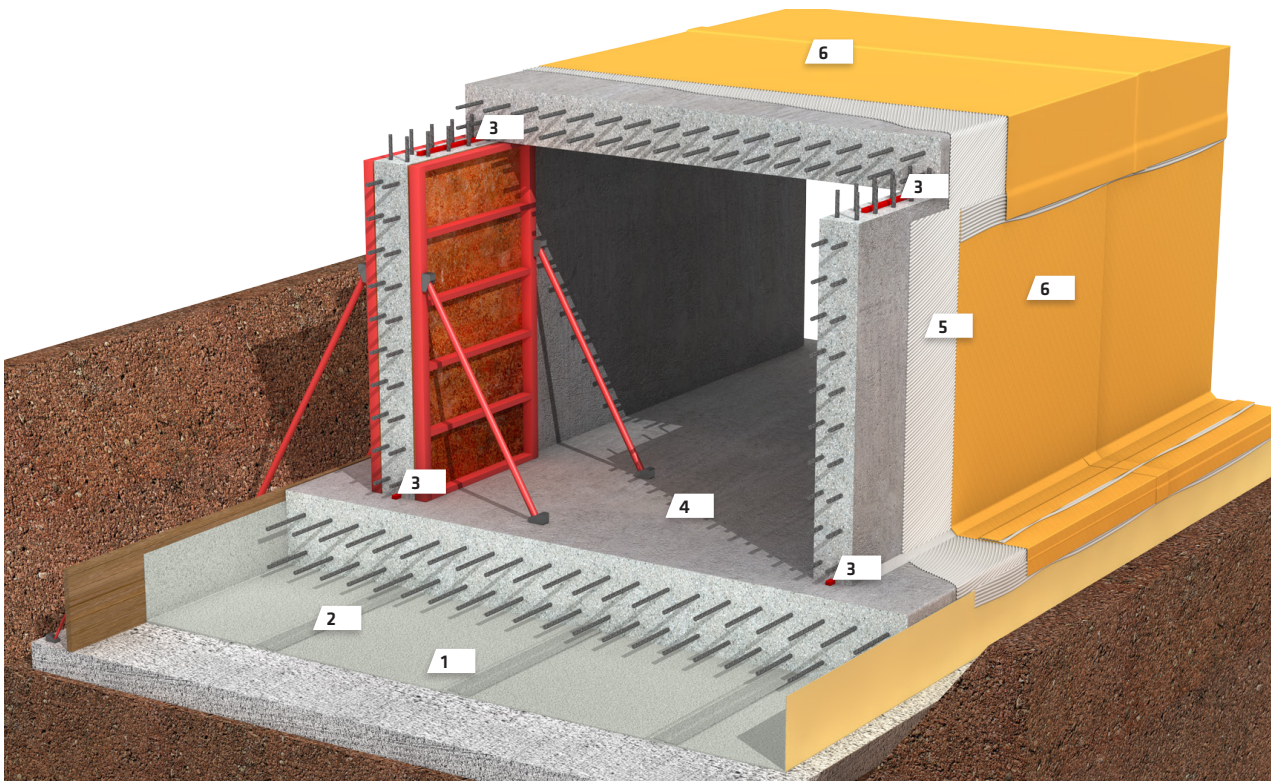


Open excavation with SikaProof® A+: After removing the formwork, the anchor penetrations have to be sealed.

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. protrusions/junctions. In this applica-

tion, 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.

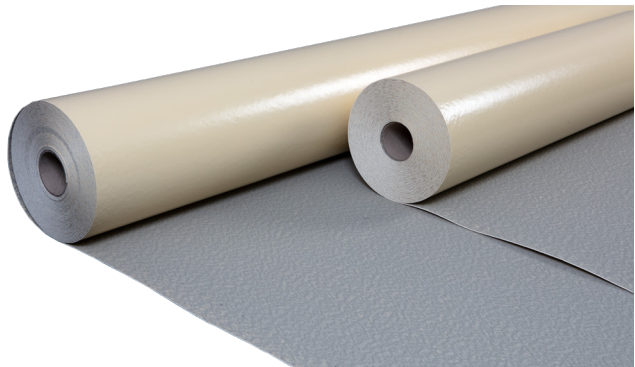
SikaProof® SYSTEM COMPONENTS

PRE-APPLIED SYSTEM

SikaProof® A+ MEMBRANES

Used for concrete protection and waterproofing

- SikaProof® A+ 12



SikaProof® A+ membranes, 2.0 m width

SYSTEM COMPONENTS

Used for sealing overlap joints and creating detail solutions within the system.

- SikaProof® Tape A+ N, internal adhesive tape for internal jointing and detailing over the laps
- SikaProof® Sandwich Tape, double-sided adhesive for alternative jointing in between the laps



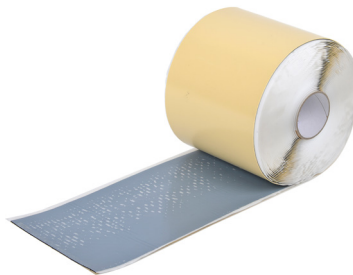
SikaProof® Tape A+ N



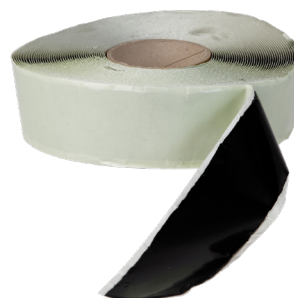
SikaProof® Sandwich Tape

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 in case of 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 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 12.5 kg metal pails.



SikaProof® P-12 membrane with special edge design



SikaProof® Primer-01

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.

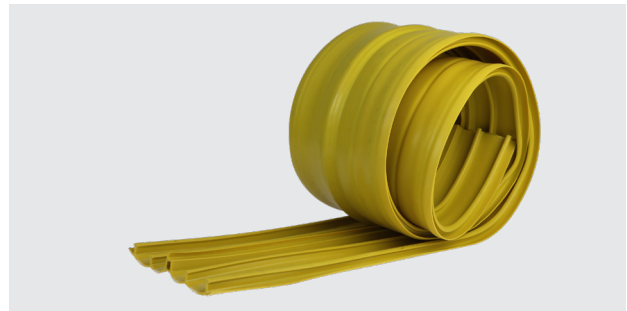
SikaSwell® SWELLABLE PRODUCTS

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.



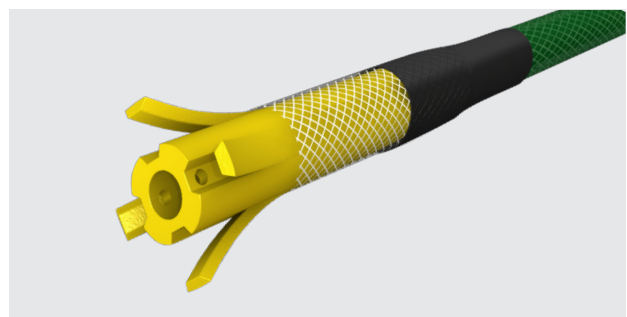
Sika Waterbar®

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



SikaFuko® INJECTION HOSES SYSTEM

Typically used as a secondary or complementary back-up system to seal construction, movement or connection joints (e.g. diaphragm walls) and for details appropriate for Sika injection material.



Sikadur-Combiflex® SG SYSTEM

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-ground 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 primed concrete surfaces to achieve an optimal fully bonded system.



Sika Waterbar® FB-125

Sika Waterbar® FB-125 is a hybrid waterstop with a rough textured surface based on flexible polyolefin (FPO). The waterstop is placed into the fresh concrete and becomes fully embedded in the cured concrete. It provides a fully bonded, durable watertight seal, that prevents any lateral water underflow.

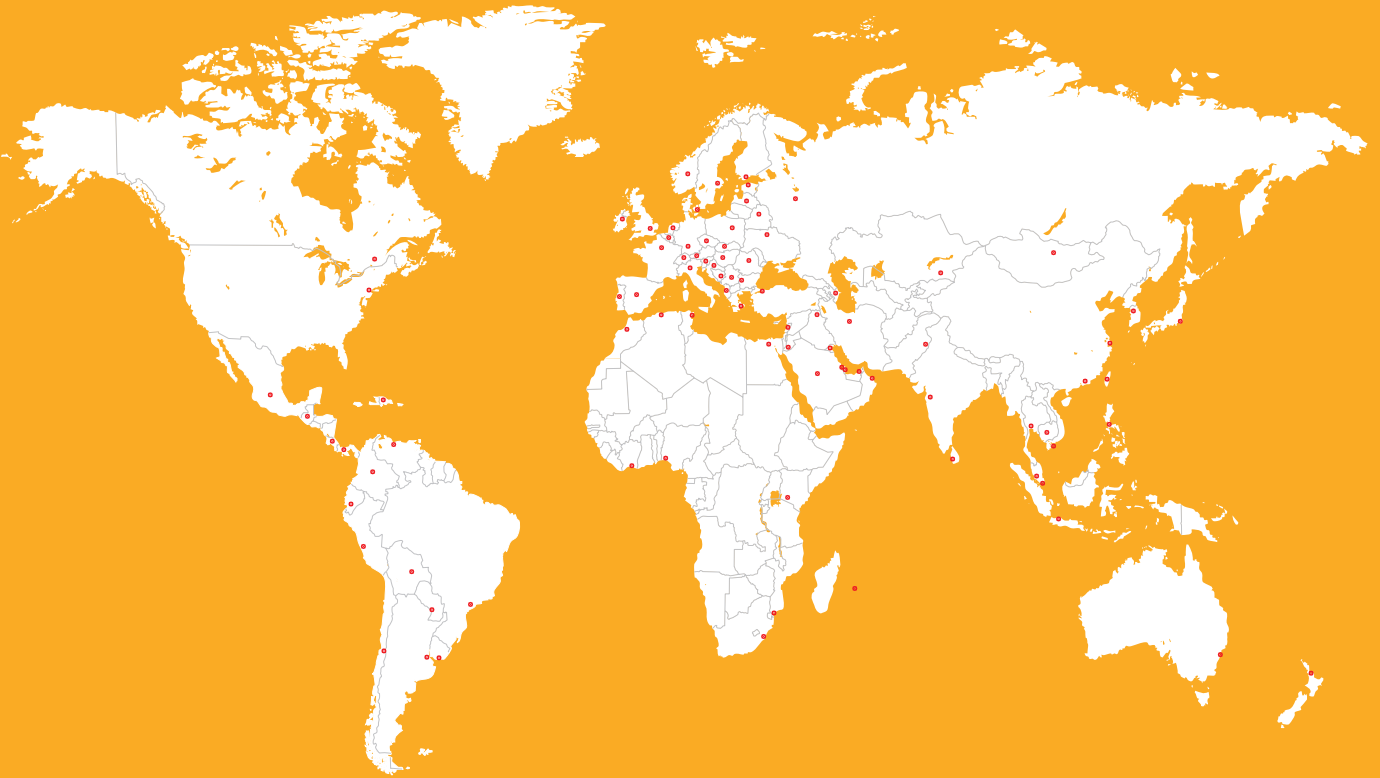
Uses:

It is designed to seal construction joints as an internal waterstop in watertight concrete constructions. Typical applications:

- Underground structures and basements
- Water retaining structures
- Water treatment plants
- Swimming pools
- Reservoirs
- Retaining walls



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.

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

SIKA (NZ) LTD
85-91 Patiki Road,
Avondale, Auckland,
New Zealand, 1026

Contact
Phone 0800 745 269
www.sika.co.nz

BUILDING TRUST

