



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, highly 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 basement 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 its simple, fast and secure application the unique SikaProof® A+ and P system can be used not only for new structures but also for the renovation of existing basement structures; 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 basement 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 is becoming 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-optimized solution.

USED FOR DRY BASEMENTS IN COMMERCIAL AND RESIDENTIAL BUILDINGS



PARKING GARAGES



ARCHIVES



TECHNICAL ROOMS



LIVING AREAS

AND WATERTIGHT BASEMENTS AND BELOW GROUND STRUCTURES



LEISURE FACILITIES



SUBWAY STATIONS



UNDERPASSES



SERVICE ROOMS

SikaProof® MEMBRANE SYSTEM – AN OVERVIEW



1



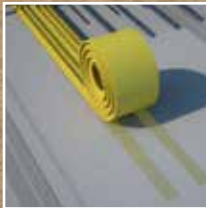
SikaProof® A+ pre-applied membrane

2



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

3



Sika® Greenstreak® Waterstop joint waterproofing

4



SikaFuko® VT injection hose

5



Sika® Hydrotite® 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 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-1201 in-situ adhered system**

The applied SikaProof® Adhesive-11 H (horizontal applications) or SikaProof® Adhesive-11 V (vertical applications) 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.

The 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**

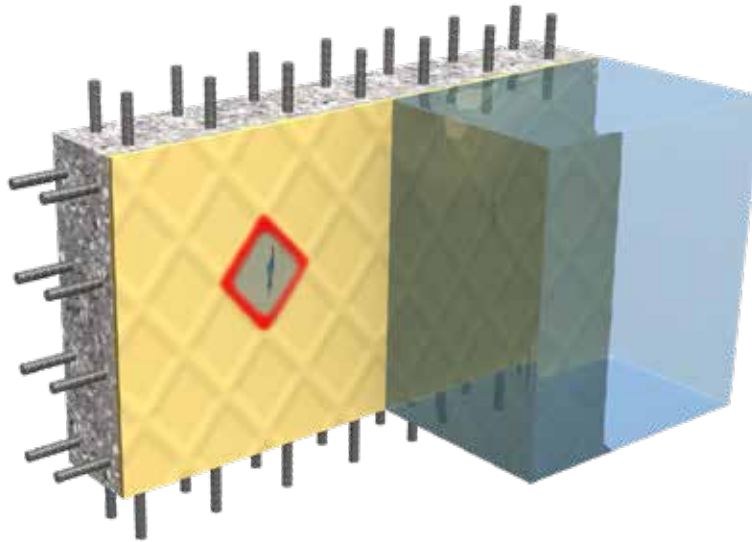
THE FULLY BONDED TECHNOLOGY

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 a high safety and 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 locally limited area.

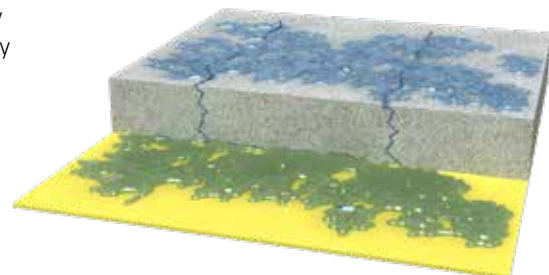
The key feature of “the fully bonded technology” is the same in both SikaProof® A+ and P and this bond is not only dependent on the membrane system. The appropriate concrete quality ensures the success of the fully bonded system. For this purpose concrete mix design and the workmanship have to be planned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

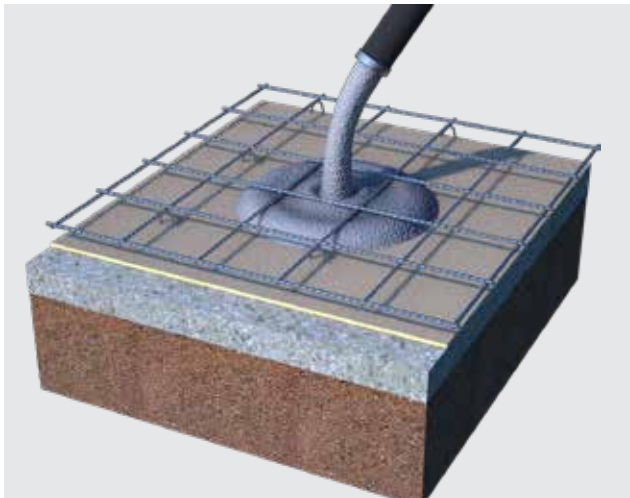
The SikaProof® fully bonded system limits any water ingress / leakage of the structure on a local area in the event of a damage to the membrane (see above picture).

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 structure, such as joints and cracks.



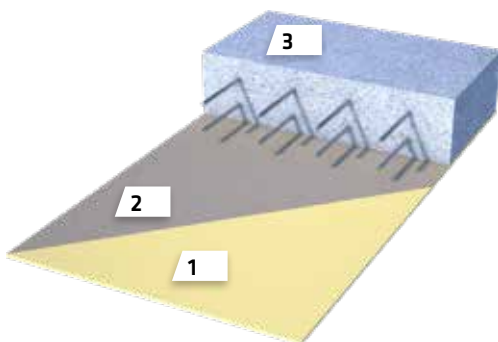
... AND HOW DOES IT WORK?

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.

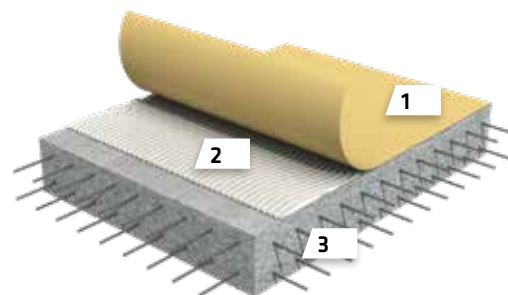


The post-applied SikaProof® P-1201 system, the membrane is installed into the freshly applied adhesive onto the prepared hardened concrete surface. There is no primer required, the full-surface and highly durable bond to concrete structure is created by the adhesive.



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-11 (H or V) (2) onto the prepared hardened structural concrete substrate (3).



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 of 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:

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

BENEFIT:

- Less waste and less cost
- Low carbon footprint
- Eco-friendly

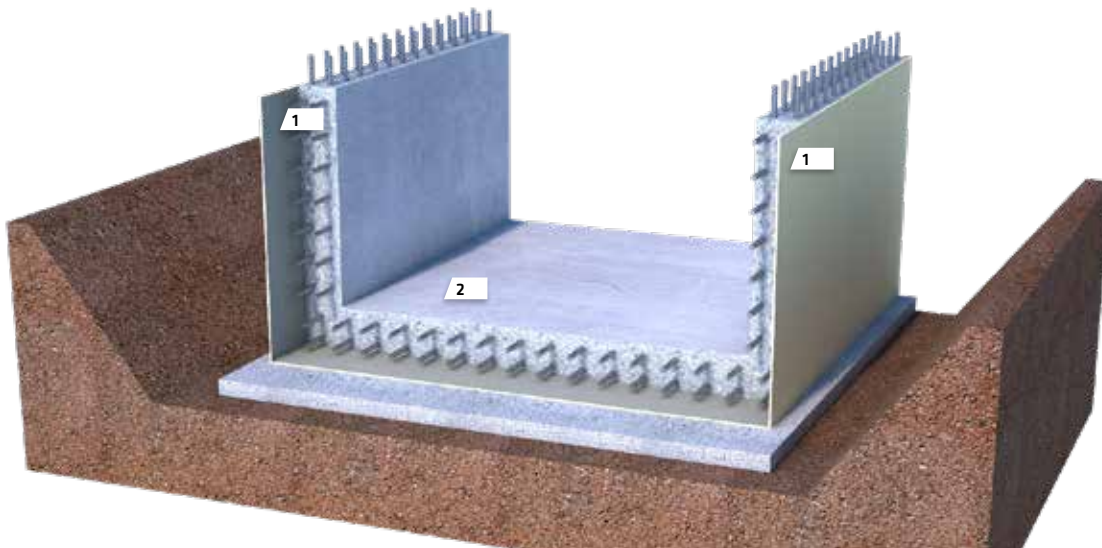


WHERE TO USE SikaProof® A+ and P?

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 these 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.

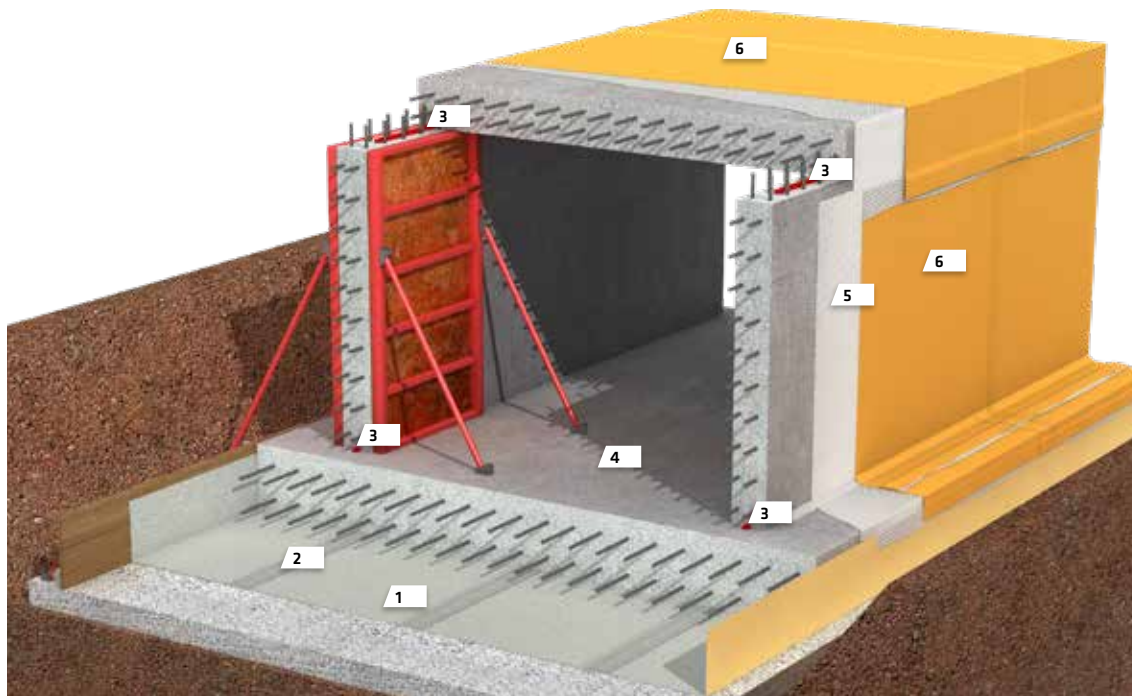


Open excavation with SikaProof® A+: After removing the formwork, the anchor penetrations have to be sealed.

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,
Sika® Hydrotite®

4

Sika® Watertight
Concrete

5

SikaProof®
Adhesive-11 (H or V)

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, 1.0 and 2.0 m width

SYSTEM COMPONENTS

Used for sealing overlap joints and to create detail solutions within 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. Used 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. Used to seal and fix/repair details within the system.



SikaProof® Patch-200 B



SikaProof® FixTape-50

POST-APPLIED SYSTEMS

SikaProof® P-1201 IN-SITU ADHERED SYSTEM

The system consists of the following components:

- SikaProof® P-1200
The membrane is available in 1.0 m width, with an installation mark.
Used for concrete protection, damp and waterproofing applications with high requirements.
- SikaProof® Adhesive-11 H (horizontal applications) and SikaProof Adhesive-11 V (vertical applications)
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-11 (H & V),
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&P SYSTEM requires an additional joint sealing solution for all construction, 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 backup in the area.

Sika® Greenstreak® SWELLABLE WATERSTOPS

High-performance, hydrophilic, swelling profiles for sealing construction joints. Sika® Greenstreak® Swellable Waterstops can also be used in combination with the SikaProof® A system as an additional back-up solution around complex penetrations, such as pipe penetrations or service entries.



Sika® Greenstreak® Waterstops

The most common joint sealing solution for construction joints and especially mandatory for expansion joints - using the appropriate profile of the wide Sika waterstop 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 stand alone solutions or in combination with SikaProof® A.

Sikalastic® 320 NS/SL

Single component, liquid applied, bitumen modified, coal tar free, moisture cured polyurethane waterproofing membrane available in self-leveling (SL), sprayable (SG) and non-sag (NS) consistencies.

- Available in Self-leveling and Non-sag consistencies
- Application on green or damp concrete
- Low VOC content (<48 g/L)



SikaBit® S-60– Self Adhering Sheet Waterproofing Membrane

Is a proprietary composite, uniquely designed to provide high strength, low temperature adhesion and high temperature stability in a superior waterproofing membrane. A tough cross-laminated film forms a resilient barrier against physical damage and water migration. It is a cold applied system requiring no heat or special equipment to install.

SikaBit® S-60 is ideal for waterproofing below grade concrete, masonry structures and wood surfaces where in-service temperatures will not exceed 130°F. It can also be applied to split slab construction both above and below grade as well as earth sheltered structures.

SikaBit® S-60 is available in 200 sf rolls. Each roll is 3 ft. x 66.7 ft.



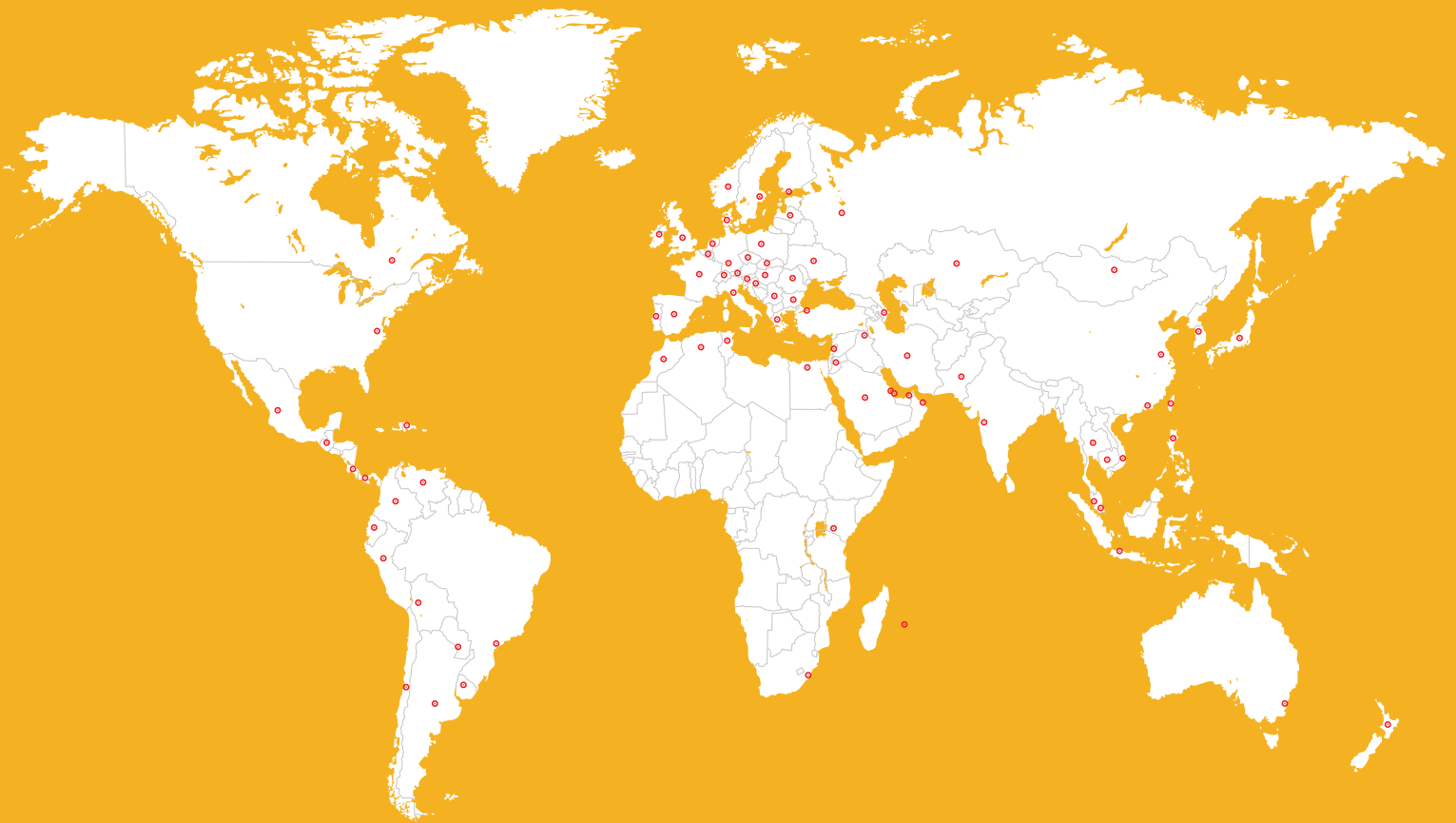
Sikalastic® RoofPro SYSTEMS

The Sikalastic® RoofPro family of polyurethane-based roofing and waterproofing membrane systems has a 25 year track record of successful applications worldwide. These systems combine a uniquely-formulated liquid resin with a high-strength fiberglass or polyester-based fabric reinforcement to form a tough, resilient membrane that conforms and bonds tightly to the substrate surface.

- Sikalastic® 601 BC and Sikalastic 621 TC
- Sikalastic® 624 WP Waterproofing System
- Sikalastic® 641 Roofing System
- Sikalastic® 641 Lo-VOC Roofing System



GLOBAL BUT LOCAL PARTNERSHIP



The sale of all Sika products are subject to the following Limited Warranty:

LIMITED MATERIAL WARRANTY

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor.

NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

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

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