



WATERPROOFING SIKA SOLUTIONS FOR WATERTIGHT CONCRETE

**BUILDING TRUST
CONSTRUIRE LA CONFIANCE**



A high-angle photograph of a construction site. The floor is covered in a dense grid of steel rebar. Three workers wearing yellow hard hats and work clothes are visible. One worker on the left is using a long, yellow-painted concrete pump hose. A large yellow metal structure, possibly a pump or support, is positioned in the middle ground. The walls of the structure are made of vertical wooden planks.

A HISTORY OF WATERPROOFING

Since Sika's foundation in Zurich, Switzerland in 1910, products such as Sika-1, Sika-2 and Sika-4a helped to lay the foundation for Sika's worldwide prominence in the field of admixtures. The ability of these products to speed up set times and water-proof concrete helped to propel Sika to the forefront of this industry and ensure its growth over several generations.

Today, with more than 100 years of worldwide experience in watertight concrete construction to draw upon, Sika Canada Inc. is proud to introduce a comprehensive and innovative product offering for watertight structures: a full range of concrete admixtures for the production of watertight concrete supported by a complete spectrum of products for watertight joints -- including waterstops, single- or multiple-use injection hose systems, swelling waterstops as well as versatile sealing systems that can be applied before or after concrete placement.

Sika further supports the watertight structures market with innovative waterproofing systems, coatings, sealants, and repair mortars. This combination of technologies is precisely what allows Sika to present an extensive and custom-tailored approach which addresses customers' needs economically and efficiently.

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KEY TECHNOLOGIES FOR SUCCESS

Sika offers comprehensive solutions for watertight structures comprised of a complete range of concrete admixtures for the production of watertight concrete, supported by a full spectrum of products for watertight joints, including waterstops, single- or multiple-use injection hose systems, swelling waterstops and versatile sealing systems. Sika offers unique solutions for projects of every size.



Watertight Concrete

Dense, Impermeable Concrete

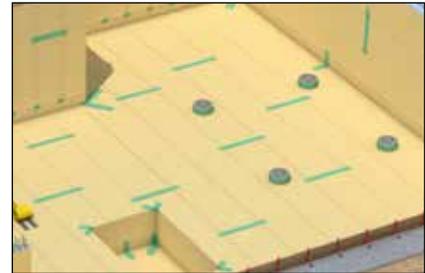
Watertight concrete requires diminished capillarity, low absorption and reduced permeability. Sika's range of concrete admixtures addresses specific issues and problems that often occur.



PVC Waterstops

Construction and Movement Joints

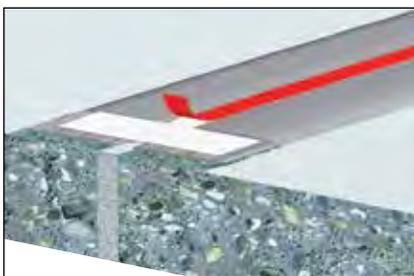
Embedded in concrete, across and/or along the joints, waterstops form a watertight diaphragm preventing the passage of fluids through the joints.



Waterproofing Membranes

Sheet Waterproofing

Pre- and cold-applied sheet waterproofing membrane systems for application below base slabs, and on single- and double-faced formwork cast walls.



Versatile Sealing Systems

Construction and Movement Joints

Sika offers unique "strip and seal" systems to seal and waterproof difficult and irregular cracks and joints. They withstand extreme movement and chemical exposure, while maintaining a watertight seal.



Injection Hose Systems

Construction Joints

Our single- or multiple-use injectable hose systems installed in concrete joints waterproof and seal cracks or voids along the joint.



Swelling Waterstops

Penetrations and Construction Joints

Our swelling waterstop profiles expand when exposed to water to create effective compression seals within limited-movement joints and penetrations.

Keep Water OUT

WATERPROOF STRUCTURES

Basements

Parking Garages

Utility Vaults

Marine Structures

Tunnels

Underground Stations and
Subways

Keep Water IN

WATER RETAINING STRUCTURES

Reservoirs and Water Tanks

Dams

Secondary Containment

Swimming Pools

Sewers and Pipelines

Waste Water Treatment
Structures

Watertight concrete structures are needed, not only to keep water out, but also to keep it in -- or both -- particularly in fresh-water supply and waste-water treatment facilities. Furthermore, with the advent of global warming, communities all around the world are faced with the challenge of protecting vulnerable buildings and infrastructures against inevitable, unavoidable and potentially catastrophic weather events. Engineers everywhere are focusing their efforts not so much on avoiding these events, but, rather, on diminishing their impact by waterproofing their structures to minimize the impact of flood waters.



STANDARDS AND DESIGN CRITERIA



GRADE 1

Performance

Some damp areas tolerable; local drainage may be necessary

Typical usage

- Basic storage
- Unfinished basements
- Underground parking structures
- Plant rooms (excluding electrical equipment)

Grade 1 - represents cost-effective, basic level of membrane-free, watertight concrete system, addressing low pressure water intrusion, and non-moving joints. Grade 1 can be used in cases where minor damp patches and air humidity are tolerable and when aesthetics are not critical. Typical applications include underground parking structures, or non-electrical utility or storage rooms.



GRADE 2

Performance

No water penetration, but moisture vapour tolerable; ventilation may be required

Typical usage

- Retail storage areas
- Most water and wastewater treatment plants
- Plant/Mechanical rooms and workshops requiring drier environment to accommodate electrical equipment

Grade 2 - represents an intermediate level of membrane-free, watertight concrete system, addressing medium pressure water intrusion and non-moving / moving joints. This grade can be used in cases where vapour passage is acceptable but no visible dampness is permissible. Grade 2 can be successfully used in underground retail storage, small- to medium-size inground water retaining structures, or residential swimming pools.



GRADE 3

Performance

No water penetration acceptable; dry, ventilated environment; dehumidification and air conditioning, if required.

Typical usage

- Residential areas, offices, restaurants
- Recreation centers, gymnasiums
- Data storage centers

Grade 3 - represents an advanced level of membrane-free, watertight concrete system, addressing medium water pressure, water intrusion and non moving / moving joints. Grade 3 can be used in cases where a dry, ventilated environment is required. This grade represents concrete with high aesthetic and long durability requirements used in a wide variety of applications, such as below-grade offices, retail stores, restaurants, other residential applications or large, above-ground water retaining structures, or large, commercial swimming pools.



INDEPENDENT TESTING

Selected pore blocking, watertight concrete admixtures produced by Sika have been tested by British Board of Agrément and received certification for watertight concrete systems.

To determine the best technical solution to address various aspects of your project, please contact your local Sika Sales Representative.



SIKA® CONCRETE PRODUCTION

CONSTRUCTION STAGES



Formwork

In formwork, every joint must be tight and sealed to prevent leakage of concrete paste. Close-fitting formwork will result in a smoother concrete finish.



Steel Reinforcement

In watertight construction, the design, placement and tying of steel reinforcement is particularly important to minimize any potential problems.



Concrete Placement

While transporting watertight concrete, ensure concrete remains in constant motion.



Concrete Finishing

Proper finishing techniques for a flat concrete surface are very important to ensure the structure's long-term durability and serviceability.



Concrete Curing

For watertight concrete, thorough and correct curing is essential. It is critical to immediately cover concrete with damp burlap, plastic sheeting or curing blankets, or to use curing compounds which act as a continuous evaporation-reducing system.



Joint Surface Preparation

When subsequent concrete placement will be required, use **Sika® Rugasol®** surface retarder on concrete joint face formwork to obtain a suitably rough surface for optimum aggregate interlock.

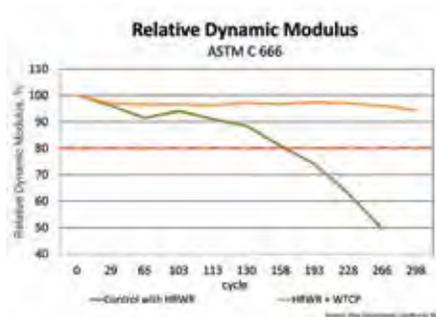
SIKA® CONCRETE PRODUCTION

THE CONCRETE MIX DESIGN AND TECHNOLOGY

Blocking Concrete's Capillary Pores

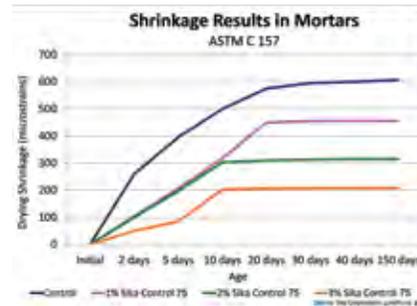
Sika® Watertight Concrete Powder and **Sika® 1+** were developed by Sika for applications where waterproof concrete is required. These products contain stearates which react with the calcium hydroxide in concrete and form insoluble calcium stearate, which coats the surface of the pores, forming a strong hydrophobic layer. When subjected to hydrostatic pressure, the globules push in front of the water and squeeze together forming a physical barrier in the capillary, which then effectively blocks the pores – even at pressures of up to 10 bar (145 psi) or a 100 meter head pressure.

FREEZE THAW DURABILITY



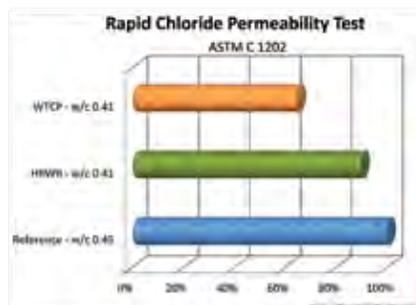
Use of Sika® Watertight Concrete Powder enhances the freeze/thaw durability of concrete.

SHRINKAGE REDUCTION



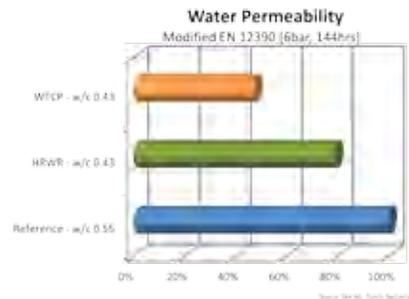
Drying concrete shrinkage can be significantly reduced by use of shrinkage reducing admixture.

RAPID CHLORIDE PERMEABILITY



RAPID CHLORIDE PERMEABILITY TEST PERFORMED AS PER ASTM C1202

WATER PERMEABILITY



WATER PERMEABILITY TEST PERFORMED AS PER MODIFIED DIN 1048 / EN 12390-8 (6 BAR / 144 HRS)

Hydrophobic pore blocking agents effectively reduce water permeability and chloride permeability through the concrete, resulting in improved concrete durability. Concrete treated with Sika® Watertight Admixtures shows significant improvement over reference concrete and also over concrete containing High Range Water-Reducing Admixtures.

CONCRETE JOINTING TECHNOLOGY

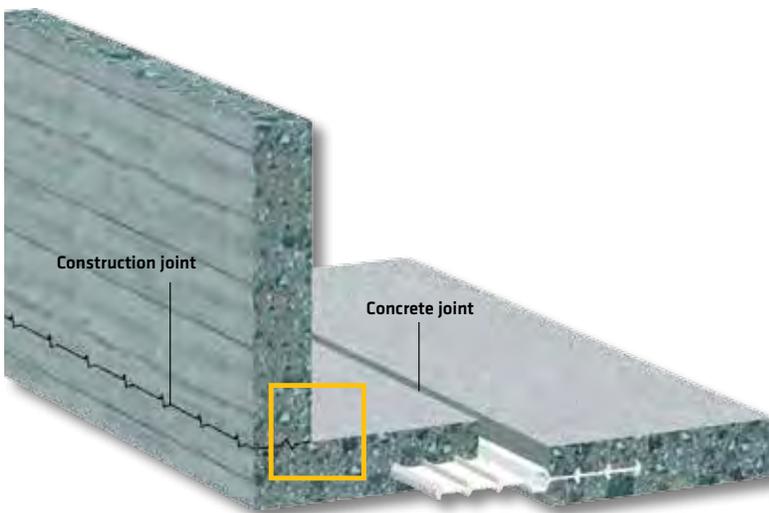
THE THREE DIFFERENT APPLICABLE PRINCIPLES FOR PRODUCING WATERPROOF JOINTS

PRINCIPLE 1: INTEGRAL CAST-IN-PLACE

Water ingress is stopped within the structural concrete.

IDEAL FOR USE:

- Where exterior waterproofing is undesirable for aesthetic reasons
- Where the waterproofing has to be protected from direct contact with aggressive water, hydrostatic water-pressure or ground movement (e.g. due to abrasion)
- Where source of hydrostatic head pressure can be from either inside or outside of the structure



Sika® Greenstreak®
Waterstop



SikaFuko® Injection
Hose System



SikaSwell®



SikaSwell® A

CONCRETE JOINTING TECHNOLOGY

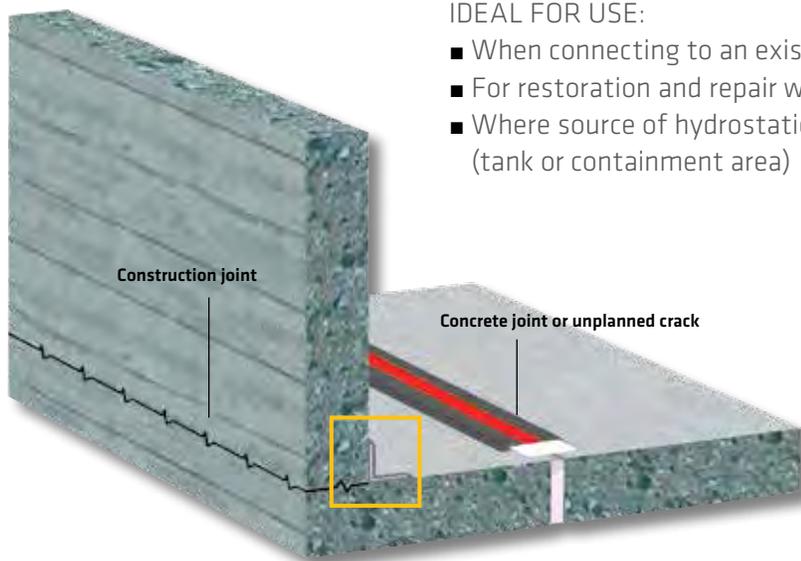
THE THREE DIFFERENT APPLICABLE PRINCIPLES FOR PRODUCING WATERPROOF JOINTS

PRINCIPLE 2: INTERNAL SURFACE-APPLIED

Water ingress is stopped at the interior surfaces of the structure.

IDEAL FOR USE:

- When connecting to an existing structure
- For restoration and repair work
- Where source of hydrostatic head pressure is inside the structure (tank or containment area)



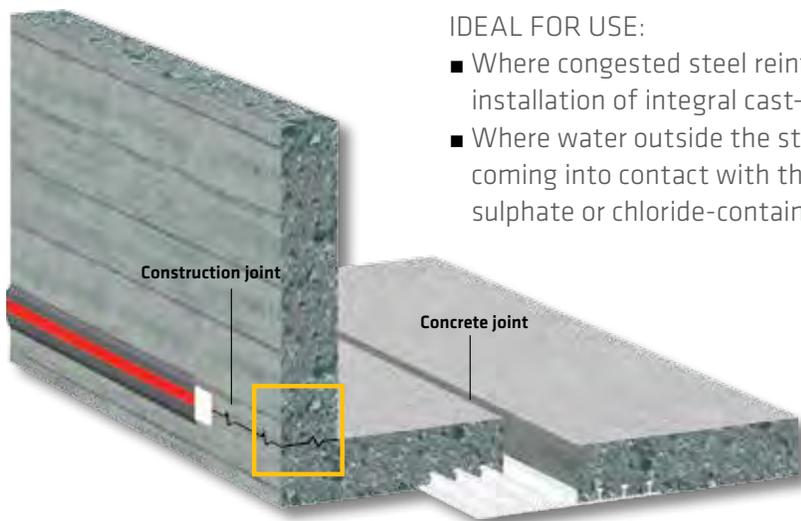
Sikadur® Combiflex® SG System

PRINCIPLE 3: EXTERNAL SURFACE-APPLIED

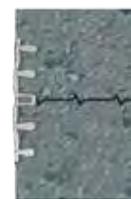
Water ingress is stopped at the exterior surfaces of the structure.

IDEAL FOR USE:

- Where congested steel reinforcement does not permit proper installation of integral cast-in-place waterproofing solutions.
- Where water outside the structure must be prevented from coming into contact with the reinforcement (e.g. aggressive sulphate or chloride-containing water)



Sikadur® Combiflex® SG System



Sika® Greenstreak® Waterstop

SELECTION CRITERIA (PRINCIPLES 1-3)

Criteria	Principle 1 Integral Cast-in-Place				Principle 2 Internal Surface- Applied	Principle 3 External Surface-Applied	
	Sika® Greenstreak® Waterstop	SikaFuko®VT Injection Hose System	SikaSwell®	Hydrotite®	Sikadur® Combiflex® SG System	Sika® Greenstreak® Waterstop	Sikadur® Combiflex® SG System
Water pressure Grade 1	• • •	• • •	• • •	• • •	• • •	• • •	• • •
Water pressure Grade 2	• • •	n/a	n/a	• •	• • • *	• • •	• • • *
Water pressure Grade 3	• • •	n/a	n/a	• •	• • • *	• • •	• • • *
Construction joint	• • •	• • •	• • •	• • •	• • •	• • •	• • •
Movement joint	• • •	n/a	n/a	n/a	• • •	• • •	• • •
Contiguous secant piling	• •	• •	• •	• •	• • •	n/a	n/a
Connection to existing buildings (movement)	retrofit	• •	• •	• •	• • •	retrofit	• •
Repair work	n/a	n/a	n/a	•	• • •	n/a	• • •
Cracks	n/a	n/a	n/a	n/a	• • •	n/a	• • •
Water inside	• • •	• •	•	• • •	• •	• • •	•
Abrasion/mechanical damage	• • •	• • •	• • •	• • •	with protection •	• •	with protection •
Chemical attack (sulphate water)	• • •	• • •	n/a	•	• • •	• • •	• • •
Aesthetic aspects	• • •	• • •	• • •	• • •	•	•	•

• • • Very Good • • Good • Limited * Must consider positive vs. negative pressure



FULLY-BONDED WATERPROOFING SYSTEMS

SikaProof® A: Durable and Watertight Solution for Below-Grade Concrete Structures.

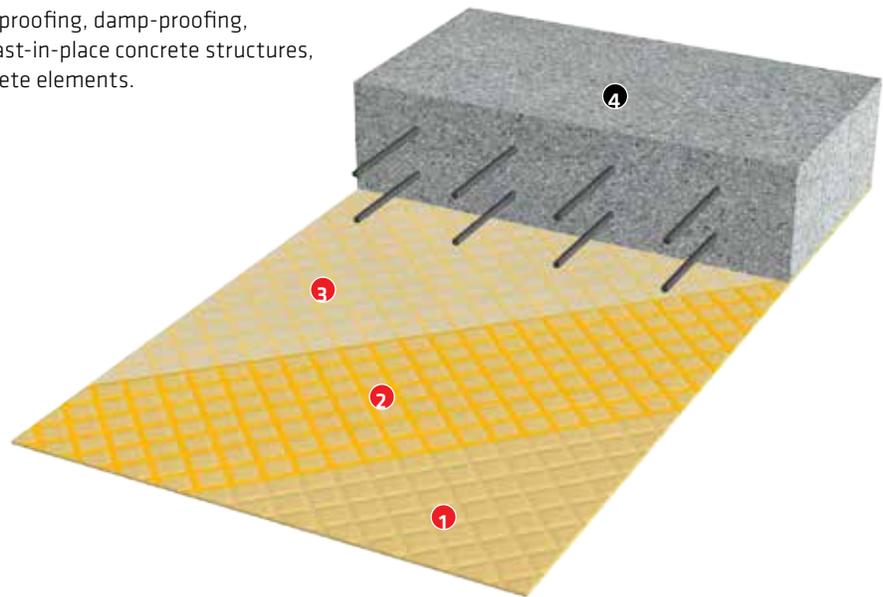
SikaProof® A is a pre-applied sheet membrane waterproofing system consisting of an embossed, highly flexible polyolefin membrane (FPO) with a unique sealant grid pattern and a specially-designed non-woven fleece. This exclusive system build-up creates a full and durable mechanical bond when the fleece is completely embedded in fresh concrete. In addition, the sealant prevents any lateral water migration between the SikaProof® A membrane system and the structural concrete.

The SikaProof® A system is easily-applied before the reinforcement is installed and the concrete is placed. SikaProof® A joints are sealed using special adhesive tapes or self-adhesive edges.

This system is typically used for the waterproofing, damp-proofing, and concrete protection of below-grade, cast-in-place concrete structures, but is also suitable for use in precast concrete elements.

THE SYSTEM BUILD UP:

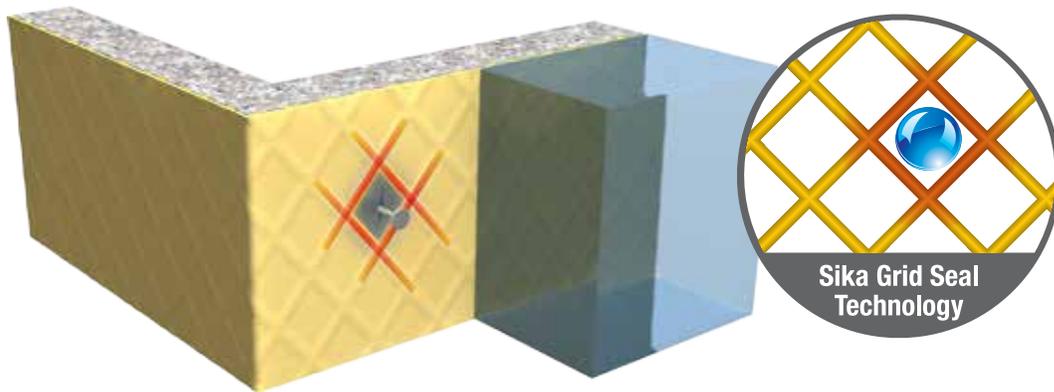
- 1 Embossed FPO membrane
- 2 Sealant grid
- 3 Non-woven fleece
- 4 Structural concrete



Slabs-on-ground

HOW DOES IT WORK?

Sika® Grid Seal Technology is the core of SikaProof® A. It consists of a special sealant that is factory-applied in a grid-pattern, which creates *mini watertight compartments*. This sealant grid seals and blocks any lateral water migration, even in the event of local damage to the membrane. The sealant grid itself is also protected by the specially-designed fleece that is laminated into the grid sealant. This fleece is also embedded completely into the fresh concrete and creates a full and durable mechanical bond between the FPO membrane layer of SikaProof® A and the cured concrete.



Walls, single- or double-faced formwork



Precast elements

JOINT SEALING TECHNOLOGIES

Sika® Greenstreak® Waterstops for Concrete Joints

Sika® Greenstreak® Waterstops are extruded from flexible PVC material for sealing both non-moving and moving concrete joints subject to hydrostatic pressure. Waterstops are cast-in-place and can be heat-welded to create a continuous diaphragm which prevents the passage of fluid through joints.

PVC is the standard for flexible waterstops, offering a broad design selection; it is accepted under the ACI 350 “Code Requirements for Environmental Engineering Concrete Structures”. Independent laboratory tests are available for the following applicable standards:

- Corps of Engineers CRD-C 572-74
- Bureau of Reclamation
- British Standards
- Various State Highway and/or Public Works Department Standards

Ribbed waterstop profiles with centre-bulb are the most versatile profiles available. The centre-bulb accommodates lateral, transverse and shear movement; ribbed profiles outperform dumbbell profiles.



Base Seal profiles are ideal for slab-on-grade joints, backfilled walls or tunnel applications and are easy to form. There are, however, some limitations with regards to transitions and intersections.



Retro-fit waterstops are also available for applications joining new and existing structures. **Westec TPER** brand and **PE waterstops** are available for chemical exposure applications not suitable for PVC waterstops.

Sika Canada offers a variety of waterstop products to accommodate many different applications. Labour-saving factory fabrications are available for transitions and intersections; furthermore, their use promotes quality waterstop installation procedures. Contact Sika Canada’s Technical Services Department regarding specific project needs.



Sealing of Movement and Construction Joints with the Sikadur® Combiflex® SG System

Sika offers a high-performance joint-sealing system consisting of the **Sikadur® Combiflex® SG** sealing strips and **Sikadur® 30** or **31 Hi-Mod Gel** epoxy adhesives. This system is renowned worldwide for its proven performance in sealing difficult joints and/or cracks in all types of structures. It is particularly useful in watertight basement construction and can be applied either to interior or exterior concrete surfaces to meet specific project requirements.

ADVANTAGES

- Easy to adapt to the construction program.
- Easy to adapt to complicated construction details.
- Additional crack repairs can be performed simultaneously.
- Damage or leaks can be repaired on exterior or interior concrete surfaces.
- Easy to apply and control -- because the work is done out in the open.
- Subsequent damage to the system is easy to repair.

THE SIKA SYSTEMS

The selection of the appropriate width and thickness of the Combiflex membrane strip is dependent upon the joint requirements and exposure:

- Sikadur® Combiflex® strips come in a 1 mm (40 mils) thickness - for low mechanical stress.
- They also come in 2 mm (80 mils) thickness - for higher mechanical stress.
- The strips come in widths of 10, 20, and 30 cm (4, 8 and 12 in). Special widths available upon request.
- The Sikadur® 30 and 31 Hi-Mod Gel adhesives provide either extended open time or fast-setting properties respectively; Sikadur® 31 Hi-Mod Gel is suitable for potable water contact as it meets ANSI/NSF Standard 61.

LIMITATIONS

- Application is weather-resistant.
- Additional protection is required when backfilling.
- Backfilling/support structures are necessary to prevent negative pressure.



Sealing of Construction Joints with the SikaFuko® VT Injection Hose System

SikaFuko® VT is a specially-designed and patented solid-core PVC injection hose system which is installed in concrete construction joints to waterproof and seal any cracks or voids along the length of the joint. The SikaFuko® VT system seals joints watertight and offers a complete maintenance program if leakage occurs in the future. When the appropriate Sika® injection material is selected, the SikaFuko® VT system can be used for multiple injections -- a significant advantage over any other hose system available.

The SikaFuko® VT injectable hose system is a logical step forward in improving waterstop technology. Utilizing this state-of-the-art injection system results in “zero leak tolerance”. Easy to install and reasonably priced, SikaFuko® VT simplifies the job and guarantees watertight concrete construction joints.

ADVANTAGES

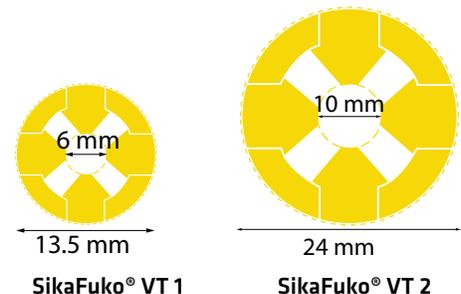
- Patented valve design can be cleaned by using water and vacuum pressure to clear the hose for future injections.
- SikaFuko® VT is suitable for a wide range of injection materials.
- The ability to reinject SikaFuko® VT provides a maintenance option to ensure a watertight joint for the life of the structure.
- SikaFuko® VT is installed in the joint prior to the second pour and does not require split formwork.
- SikaFuko® VT can be used to “water test” non-injected and injected joints for watertightness in a safe and simple manner.
- Not suitable for use in movement joints.



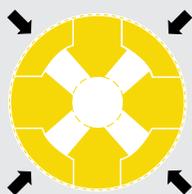
TYPICAL APPLICATIONS



Cross-section depicting two separate injections: The first injection consisted of the yellow material; the orange material was delivered via a second injection.



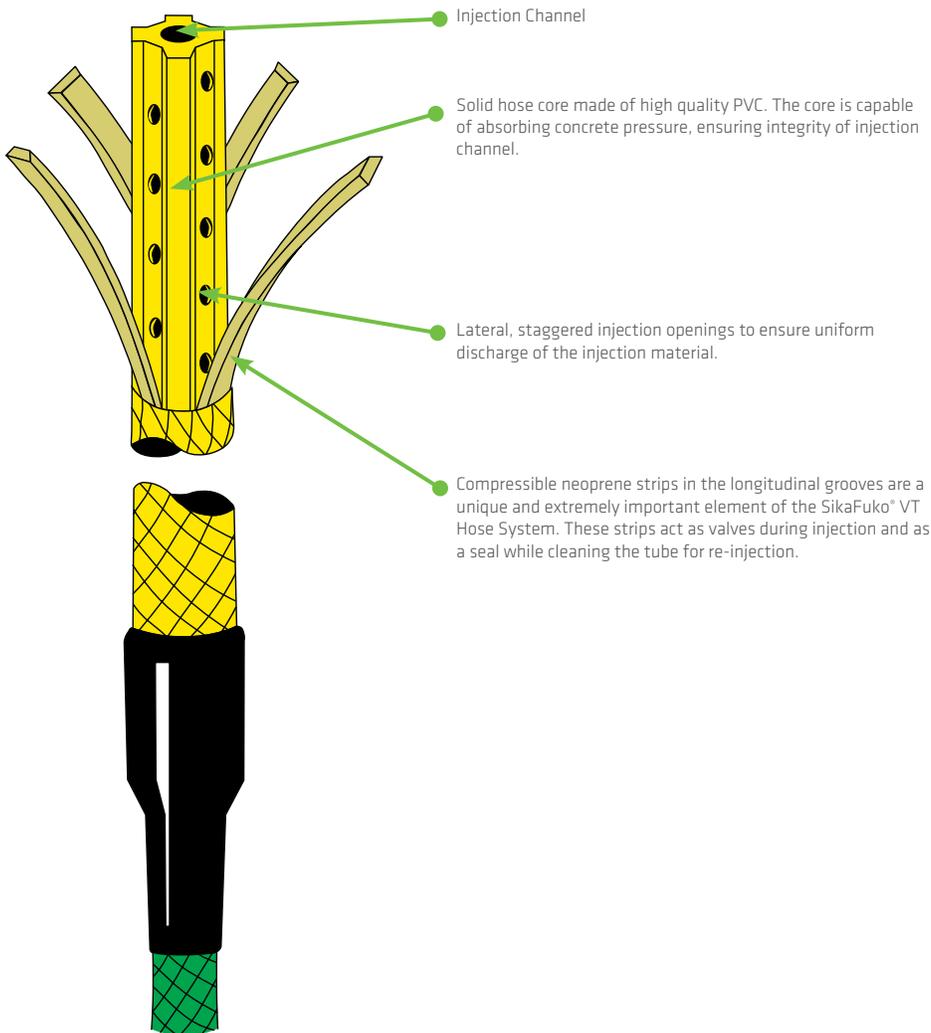
THE SIKAFUKO® VT PROCESS



Concrete Pour: When concrete is placed around the SikaFuko® VT Hose, the external pressure of the concrete seats the neoprene strips, sealing off injection openings and the injection channel.

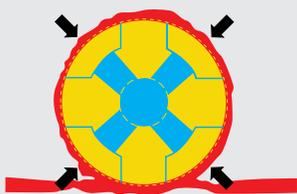


Injection: The internal injection pressure compresses the neoprene strips and allows the injection material to flow out from eight longitudinal gaps. This enables a uniform discharge of the injection material over the full length of the hose.



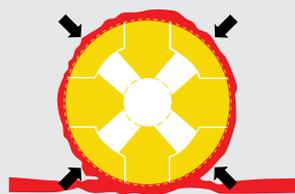
SikaFuko® Eco 1 One-time Injection Hose System

Contact Sika Canada for information regarding SikaFuko® Eco 1 (formerly Duroject), an alternative injection hose system. It is designed to deliver resin or microfine cements in a one-time injection. However, it is not for applications that may require subsequent injections.



Cleaning The Hose:

When using an approved injection material, the SikaFuko® VT Hose is easily flushed clean by using water and applying vacuum pressure. The negative pressure reseats the neoprene strips, preventing injected material from being drawn back into the injection channel upon cleaning.



Ready For Future Injection:

SikaFuko® VT Injection System is ready for re-injection, if needed.

Sealing of Construction Joints with SikaSwell® and Hydrotite Hydrophilic Waterstops

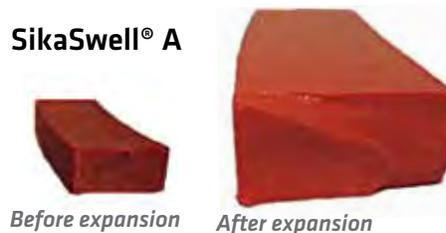
SikaSwell® and **Hydrotite** are state of the art hydrophilic waterstops with unmatched durability and watersealing capacity. Comprised of non-bentonite, modified chloroprene rubber, SikaSwell® and Hydrotite expand up to eight times their original volume when exposed to water. This expansion creates an effective compression seal within joints of limited movement. Recognized worldwide, SikaSwell® and Hydrotite have proven track records as high-quality and cost-effective solutions to water containment needs.

SikaSwell® and Hydrotite are available in a multitude of sizes and shapes for numerous applications, including construction joints, saw-cut control joints, cracks repairs and pipe penetrations. Some profiles are offered as co-extrusions to provide directional expansion.

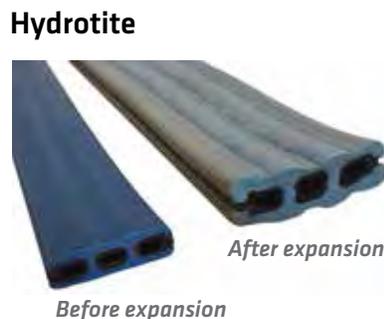
ADVANTAGES

- Outstanding physical properties
- Special expansion-delay coating to allow concrete to cure prior to expansion
- Reliable and durable (lifespan up to 100 years)
- ISO 9002-certified
- Simple, low-cost installation
- Appropriate for retro-fit as well as new construction
- Can withstand high hydrostatic pressures

SikaSwell® A



Hydrotite



TYPICAL APPLICATIONS

- Water and waste-water treatment facilities
- Manhole structures
- Tunnels and culverts
- Dams, locks, canals, water reservoirs and aqueducts
- Pipe penetrations
- Swimming pools
- Storage tanks
- Retaining walls
- Foundations
- Slabs on grade

Contact Sika Canada for alternative strip-applied waterstops for less stringent applications, products include:

SikaSwell® A - hydrophilic acrylate-ester

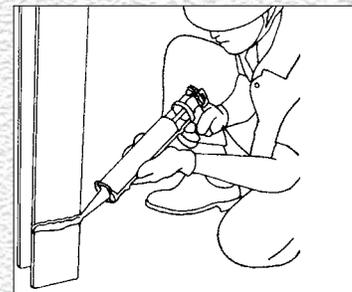
Swellstop® - butyl rubber / bentonite hydrophilic

Lockstop® - mastic / asphaltic waterstop

SEALANT



SikaSwell® S2 is a single-component water-swelling sealant with excellent and unique properties. It may be applied in locations where conventional preformed waterstops cannot be easily used. This includes irregular shaped joints, rough surfaces, and odd penetrations.



Easy Application - Using a standard caulking gun.

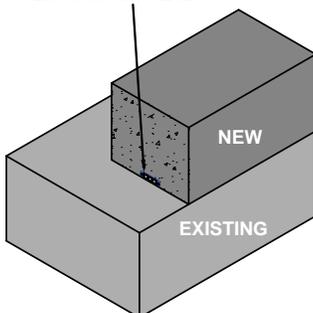
Physical Properties - After curing, SikaSwell® S2 has excellent physical properties. The rubber-like elasticity of the material and expansion characteristics create an effective watertight seal.

Expansion - SikaSwell® S2 expands when exposed to water to create an excellent water-seal, while retaining rubber-like elasticity.

Adhesion - SikaSwell® bonds to various materials, such as concrete, metal, and glass.



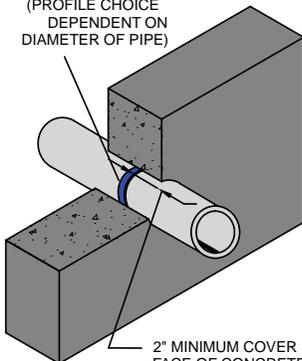
HYDROTITE CJ APPLIED TO EXISTING CONCRETE



Sealing Construction Joints with Hydrotite CJ Profiles

As this innovative product absorbs water and expands, it conforms to gap variations along the joint. This action ensures complete sealing even under extraordinary hydrostatic pressures. Hydrotite CJ profiles are treated with a special expansion-delay coating to prevent them from reacting to the fresh concrete and expanding before curing takes place.

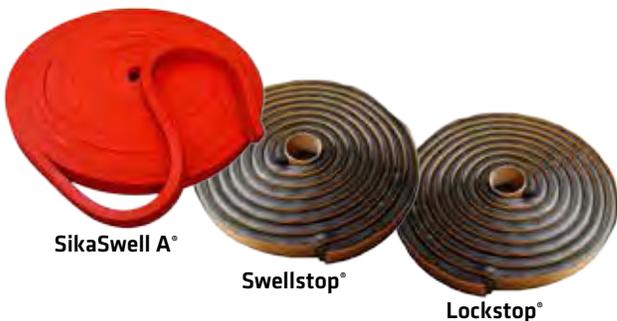
HYDROTITE O-RING, CJ, SS OR DSS PROFILE BONDED TO PIPE WITH RUBBER ADHESIVE (PROFILE CHOICE DEPENDENT ON DIAMETER OF PIPE)



2" MINIMUM COVER FROM FACE OF CONCRETE TO HYDROTITE EACH SIDE (TYPICAL)

Sealing Pipe Penetrations with Various Hydrotite Profiles

Hydrotite can be bonded to various piping materials, including concrete, steel and plastic. Hydrotite is bonded to the pipe prior to concrete placement. Installation in existing walls requires an oversize cutout be made and Hydrotite installed both on the pipe and the outside diameter of the cutout. The annulus is then filled with a non-shrink grout.



INJECTION TECHNOLOGIES FOR RESTORATION WORK

Solutions for leaks and construction damage

Concrete Damage

There are many reasons why concrete gets damaged: from poorly interpreted and realized design aspects, to inadequate or untimely consolidation, to accidents. Fortunately, Sika produces a full range of concrete repair systems that are compatible with all our Sika® waterproofing systems.

Cracks/Honeycombing

The terms “watertight” and “vapour-tight” do not necessarily mean “crack-free”. There is always a risk of cracking while concrete is in its plastic or hardened state due to stresses, such as those generated by the internal forces caused by temperature and water-content changes. In response, Sika has designed a complete range of products and systems to repair the “cracks” and “honeycombing” in watertight concrete structures.



Sealing and Waterproofing of Cracks

To close, seal and bridge leaking cracks, honeycombs and voids in new and existing structures.

SikaFix® Family of Urethane Injection Products

Polyurethane foam products used as waterstopping injection material for the sealing of cracks or voids subjected to pressing and non-pressing water. Fast reaction time when in contact with water

Sika® Injection 306

A flexible, low-viscosity polyacrylate injection gel with adjustable reaction-time for permanent watertight sealing. The material reacts to form a waterproof, flexible, yet solid, gel with good adhesion to both dry and wet substrates.

Sika® Inject 215

A flexible, low-viscosity and quick-gelling polyacrylate injection gel for permanent watertight sealing. The material reacts to form a waterproof, flexible but solid gel with good adhesion to both dry and wet substrates.

Waterproofing of Construction Joints

To seal construction joints in watertight structures.

SikaFuko® VT

The world’s number one injection hose system delivers Portland cement, microfine cement, or other resins to seal cracks or voids and has a unique “re-injectable” design if future injections are required.

SikaFuko® Eco 1

An injection hose system for delivering cements or resins for single injection applications.

Sika® Injection 306

A flexible, low-viscosity polyacrylate injection gel with adjustable reaction-time for permanent watertight sealing. The material reacts to form a waterproof, flexible, yet solid, gel with good adhesion to both dry and wet substrates.

Surface Sealing and Waterproofing of Concrete Structures

To seal and restore surfaces through curtain injection of surface defects in below-ground concrete structures.

Sika® Injection 306

A flexible, low-viscosity polyacrylate injection gel with adjustable reaction-time for permanent watertight sealing. The material reacts to form a waterproof, flexible, yet solid, gel with good adhesion to both dry and wet substrates.

Sika® Inject 215

A flexible, low viscosity and quick-gelling polyacrylate injection gel for permanent watertight sealing. The material reacts to form a waterproof, flexible but solid gel, with good adhesion to both dry and wet substrates.

Product	Description	Where to Use
Sika® Injection 306	Sika® Injection 306 is a very low viscosity, elastic, polyacrylic injection resin with a versatile and adjustable reaction time.	<ul style="list-style-type: none"> • Injection of SikaFuko® injection hoses to seal construction joints • Cracks and voids with non-pressing water (damp) • Surface-area sealing of concrete structures • Post-construction, external injection sealing system for limited-movement expansion joints, drainage pipe, or joints covered with damp or saturated soil • Compartment injection of SikaPlan® membrane system
Sika® Inject 215	Sika® Inject 215 is a highly flexible, quick-setting polyacrylic resin-based swelling gel for waterproofing applications.	<ul style="list-style-type: none"> • Expansion joints with leaks • Construction joints with single or re-injectable injection hoses • Cracks and gaps in concrete against water pressure, especially where movement is expected • Structures by area-sealing and curtain-wall grouting
SikaFix® Family of Urethane Injection products	Polyurethane products used as waterstopping injection material for the sealing of cracks or voids subjected to pressing and non-pressing water. Fast reaction when in contact with water.	<ul style="list-style-type: none"> • Cracked concrete or construction joints • Actively leaking joints with flowing water

Injection Pumps *(Not supplied by Sika)*

Pumps for Polyurethane, Epoxy and Polyacrylate Resins

Single-component injection pumps designed for professional use in crack injection, suitable for Sika polyurethane, epoxy and acrylate injection resins.



Pumps for Polyacrylate Gels

A two-component injection pump is required for fast-reacting acrylate gels. The individual resin components should be introduced to the mixing head separately.



Mixers and Pumps for Microfine Cement Suspension

A colloidal mixer designed for complete and thorough mixing of Sika microfine cement suspensions is required. A pump capable providing a continuous pumping of the suspension without separation is required.



Injection Packers

Injection packers are used as connection pieces between the injection pump and the structure. Mechanical packers are for high- and low-pressure injection where injection-hole drilling is possible. Surface packers are for low-pressure injection where drilling is not possible.



ADDITIONAL SIKA® TECHNOLOGIES TO MEET INDIVIDUAL PROJECT REQUIREMENTS

Internally-Applied Protective Coatings for Increased Waterproofing-, Chemical- and Mechanical-Resistance

CHEMICAL, MECHANICAL AND WATER-RESISTANT COATINGS



Wastewater Treatment Plant

PROBLEM

- Concrete erosion due to acidic environment
- Concrete erosion due to swelling from sulphates
- Loss of alkaline protection and corrosion of reinforcement steel

SIKA SOLUTION

- Application of Sikagard® EpoCem® as a pore-sealer and as a temporary moisture-barrier
- Application of a Sikagard® protective coating



Secondary Containment for Groundwater Protection

PROBLEM

- Legal responsibility and environmental legislation
- Groundwater protection zones
- Aggressive chemicals in storage

SIKA SOLUTION

- Application of Sikagard® EpoCem® as a temporary moisture-barrier
- Application of a Sikagard® protective coating against aggressive chemical attack



Underground Parking Deck Waterproofing Systems

PROBLEM

- Water brought in by cars and other vehicles
- Concrete attack from de-icing salts
- Abrasion resulting from vehicle movement

SIKA SOLUTION

- Application of Sikalastic® DuoDeck waterproofing membrane
- Applications of vapour-tight or vapour-diffusible Sikalastic® DuoDeck wearing surface

Externally-Applied Protective Coatings to Prevent Aggressive Water Ingress to the Structure

FLEXIBLE SLURRY COATING FOR FILLING AND SEALING SURFACE DEFECTS



PROBLEM

- Surface defects and blowholes (bugholes) etc.

SIKA SOLUTION

- Application of SikaTop® Seal 107, the cement-based, polymer-modified protective and waterproof slurry.

SUMMARY - Sika® Waterproofing Products

Admixtures	Sika® 1+ or Sika® Watertight Concrete Powder	Highly effective hydrophobic pore-blocking admixtures
	Sika® ViscoCrete® or Sikament® Series	Polycarboxylate-based high-range water-reducing admixtures for use in conventional or Self-Consolidating Concrete (SCC)
	Sika® Control	Shrinkage-reducing admixture for high-performance concrete
Jointing systems	Sika® Greenstreak® and Southern Metal Waterstop Elastic Joint Sealing System	PVC waterstops for the sealing of both movement and construction joints, plus producing watertight compartments with Sikaplan sheet membranes
	Sikadur® Combiflex® SG Elastic Joint Sealing System	Movement- and construction-joint sealing, plus crack-sealing system consisting of flexible membrane strips and epoxy adhesives
	Hydrotite or SikaSwell® Swelling Joint Sealing Profiles	Hydrophilic swelling joint profiles for the sealing of construction-joints
Joint sealing hose system	SikaFuko® Injection Hose Systems	Injectable and re-injectable joint hoses for the sealing of construction-joints
Injection	Sika® Injection Resins and Micro-Cements	Solutions for remedial waterproofing of leaking concrete, joints and membranes including compartment systems
Mortars	Sika® MonoTop®, SikaTop® and EpoCem®	Polymer or epoxy-modified cementitious repair mortars, or waterproof slurry coatings for restoring and protecting concrete surfaces
Membranes	SikaProof®, SikaPlan® and Sarnafil® Membranes	Single, double or compartment systems based on PVC or TPO membranes and external to the concrete structure.

SIKA SOLUTIONS FROM ROOF TO FOUNDATIONS

Roofing Systems



Sarnafil®
Sikaplan®
Sikalastic®

Concrete Production



Sika® ViscoCrete®
Sika® Retarder®
Sika® AER^{CA}

Joint Sealing



Sikaflex®
Sikasil®
Sikadur® Combiflex

Grouting and Anchoring



SikaGrout®
Sikadur®
Sika AnchorFix®

Concrete Repair & Protection



Sika® MonoTop®
SikaTop®, SikaRepair®
Sikagard®

Structural Strengthening



Sikadur®, Sika® CarboDur®
SikaWrap®
Sika® CarboShear

Floor & Wall Systems



Sikafloor®
Sikagard®
Sikagard® Duroplast

Waterproofing Systems



SikaProof®, SikaFuko®
Sika® Greenstreak®
SikaSwell®, SikaFix®

Sika Canada Inc., a member of the Sika Group, is a leader in the field of speciality chemicals for construction and manufacturing industries. Our product lines feature high quality roofing systems, concrete admixtures, mortars and resins, sealants and adhesives, structural strengthening components, industrial and decorative flooring, as well as protective coatings and waterproofing systems. Our expertise is borne out of a global presence and served by strong, local support. Sika has earned the trust of our customers for over 100 years, by delivering the highest standards of commitment and partnership.

Also Available:



The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.

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