



# CONCRETE Sika® PERMEABILITY REDUCING ADMIXTURES

INTEGRAL SOLUTIONS FOR WATERTIGHT CONCRETE

BUILDING TRUST  
CONSTRUIRE LA CONFiance



# SIKA® PERMEABILITY REDUCING ADMIXTURES

**SIKA'S HISTORY OF INNOVATION BEGAN IN 1910** with the creation of an integral waterproofing admixture – “Sika 1”. Since that time, Sika has continually improved on these technologies and introduced more products to suit customer needs. With both hydrophobic pore-blocking and crystalline products available, Sika's solutions will make your next project watertight for the duration of its service life.

The two core product technologies in permeability reducing admixtures are hydrophilic crystalline and hydrophobic pore blocking. Sika is the only manufacturer to offer both product technologies!

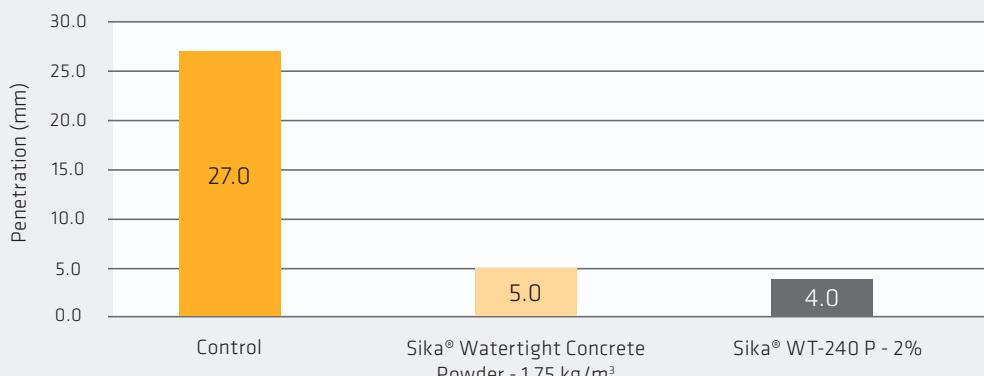
Sika's hydrophilic crystalline permeability reducing admixture (Sika® WT-240 P) and hydrophobic pore blocking admixture (Sika® Watertight Concrete Powder) can be used to effectively reduce concrete permeability in hydraulic structures to retain water or keep it from infiltrating conditioned spaces. Integral admixtures provide expedited structure completion and reduced labor costs when compared to traditional waterproofing construction using loose-laid or adhered waterproofing membranes. Additionally, below ground structures using permeability reducing admixtures are less sensitive to structure backfill procedures, which can damage alternative waterproofing technologies.

As with any type of construction, waterproofing construction must follow minimum standards of design and construction.

Take care to properly waterproof joints with waterstop and locate joints to create predictive cracking patterns that are backed up with appropriate joint waterproofing systems such as PVC waterstop, or strip applied expansive waterstop. Concrete mix design is also critically important. For example, aggregate sizing, quality, and packing density will limit paste volume and, subsequently, control shrinkage. Utilizing a low water/cement ratio will create a strong, dense and durable mix capable of supporting structure loads and withstanding environmental service conditions. Current admixture technologies can be used to facilitate concrete placement year round and address modern day construction challenges such as slump retention and pumping characteristics.

With experts in the fields of waterproofing, sealants, repair, flooring, and roofing, Sika® is your single-source provider for all of your product needs. From pre-pour preparation to a structure being put into service, your next waterproofing job is in the hands of the market leader for innovation, service and value.

## PERMEABILITY REDUCING ADMIXTURES COMPARISON, DIN 1048 - WATER PENETRATION



\*Mix information: Cement Type I/II, w/c: 0.40. Initial slump: 4", Sika® ViscoCrete®-2100

## FEATURES AND BENEFITS

- Increase Durability & Service Life
- Increase Safety
- Decrease Labour for Installation
- Reduce Maintenance Costs
- Decrease Time of Construction
- Redundant Waterproofing System (vs. Sheet applied)
- Higher Level of Reinforcement Protection

## TYPICAL APPLICATIONS

- Foundations / Superstructures
- Water / Wastewater Treatment Plants
- Bridges and Highways
- Parking Garages
- Precast Concrete
- Shotcrete / Tunneling
- Commercial and Industrial Facilities
- Data Centers
- Marine Structures
- Swimming Pools

# HYDROPHOBIC PORE BLOCKING & HYDROPHILIC CRYSTALLINE ADMIXTURES

Concrete design begins with the proper proportioning of cement, water, and aggregate. Design of concrete, however, is optimized for value, workability, and performance with the addition of chemical and mineral admixtures. Below are some of the products available to enhance concrete placement, performance, and durability in waterproofing applications.

## SIKA® WATERTIGHT CONCRETE POWDER

*Hydrophobic Pore-Blocking Admixture, ACI 212 - Report on Chemical Admixtures for Concrete*

- Sika® Watertight Concrete Powder couples the action of a hydrophobic pore blocker with a powerful densifier, allowing production of low water/cement ratio concrete with both decreased absorption and increased permeability resistance
- Reacts with calcium ions in the cement to produce a hydrophobic layer within the capillary pores, blocking them
- Improves durability and resistance to sulfates / carbonation
- Reduces moisture transmission and leaching
- Up to 80 % reduction in hydrostatic permeability
- Meets ASTM C494 Type S
- NSF 61/ANSI Standard Certified
- Easy to use, improves both plastic and hardened concrete properties
- Simple dosing with pre-measured, 1.34 kg (2.95 lb), water soluble bags (recommended dosage of 1.75 kg per cubic meter, by volume)



## SIKA® WT-240 P

*Crystalline Waterproofing Admixture, ACI 212 - Report on Chemical Admixtures for Concrete*

- Crystalline-based Permeability Reducing Admixture (PRAH) reducing the ability of concrete to conduct water flow
- Contains unique moisture activated compounds that produce insoluble crystalline deposits that form within the capillary system. These crystalline formations have the ability to reduce the size of capillary pores and prevent water penetration
- Ability to seal cracks up to 0.40 mm (0.016 in)
- Up to 85 % reduction in permeability
- Meets ASTM C494 Type S
- NSF 61/ANSI Standard Certified
- Dosage rate of 2 %, dependent on required performance
- Easy addition using repulpable 5.4 kg (12 lb) bags



## SIKA® ACCESSORIES FOR CONCRETE JOINTS

Concrete admixtures are not the only item to consider on your next waterproofing project. Another essential element for success is the implementation of proper jointing. Sika® Greenstreak is the industry leading manufacturer of concrete construction products that include waterstops, concrete joint sealing systems, and numerous concrete accessories. All horizontal and vertical joints must include an integral joint waterstop system. Common products used in this application include Sika® Greenstreak waterstop profiles, strip applied waterstop such as Hydrotite® and injection systems such as SikaFuko® VT. Each offering has unique performance benefits and have a variety of applications; contact Sika Canada for your next project.



# SIKA SOLUTIONS FROM ROOF TO FOUNDATION

## Roofing Systems



Sarnafil®  
Sikaplan®  
Sikalastic®

## Concrete Production



Sika® ViscoCrete®  
Sika® Plastocrete®, SikaSet®  
Sika® Air / AER®<sup>CA</sup>

## 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.

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 shelflife. 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 information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: [www.sika.ca](http://www.sika.ca)

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