



CONCRETE

Sika[®] PERMEABILITY
REDUCING ADMIXTURES

INTEGRAL SOLUTIONS FOR WATERTIGHT CONCRETE

BUILDING TRUST



SIKA® PERMEABILITY REDUCING ADMIXTURES

SIKA'S LEGACY OF WATERPROOFING BEGAN IN 1910 with the creation of an integral waterproofing admixture – “Sika 1”. Since that time, Sika has continually improved and added to these technologies, building on the legacy of waterproofing that Sika was literally founded on. Today, Sika is the only manufacturer with both hydrophobic poreblocking and crystalline waterproofing products available.

The two core product technologies in permeability reducing admixtures are hydrophilic crystalline and hydrophobic pore blocking.

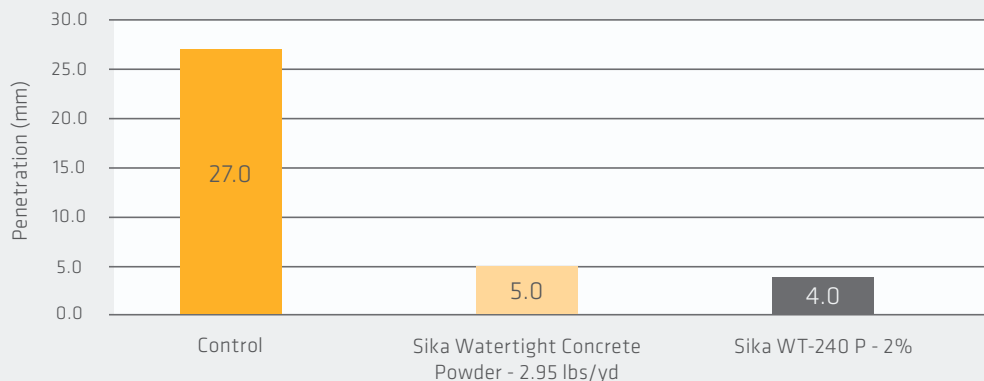
Sika's hydrophilic crystalline permeability reducing admixture (Sika WT-240 P) and hydrophobic pore blocking admixture (Sika Watertight Concrete Powder) can be used to effectively reduce concrete permeability in hydraulic structures to retain water or keep it from infiltrating conditioned spaces. Integral admixtures provide added construction efficiency 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 membrane waterproofing systems.

As with any type of construction, waterproofing construction must follow minimum standards of design and construction such as ACI 350-Code Requirements for Environmental Engineering Concrete Structures.

Good standards of practice include:

- Waterproofing joints with appropriate PVC or strip applied waterstop profile to meet head pressure and constructability requirements
- Locate joints to create predictive cracking patterns that are backed up with appropriate joint waterproofing systems such as PVC or strip applied expansive waterstop.
- Concrete mix design, aggregate sizing, quality, and packing density to limit paste volume and, subsequently, control shrinkage.
- Utilize a low water/cement ratio to create a strong, dense and durable mix capable of supporting structure loads and withstanding environmental service conditions.
- Utilize admixture technology such as High Range Water Reducers to facilitate concrete placement and lower water/cement ratios without sacrificing placeability, slump retention and compaction.

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 Structure Durability & Service Life
- 85% Reduction in Water Penetration
- Suitable for Hydrostatic Pressure Applications (PRAH per ACI 212)
- NSF 61 Certified for Use with Potable Water
- Reduce Construction Costs
- RED Tinted Version Available for Visual Identification of Use
- Expedite Construction

TYPICAL APPLICATIONS

- Foundations / Basements
- Water / Wastewater Treatment Plants
- Elevator Pits
- Parking Garages
- Precast Concrete
- Vaults and Basins
- Precast Manholes
- Shotcrete / Tunneling
- Waterparks
- Marine Structures
- Swimming Pools
- Reservoirs / Dams
- Utility Encasements

HYDROPHOBIC PORE BLOCKING & 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 (PRAH per ACI 212).
- Meets ASTM C494 Type S.
- NSF 61/ANSI Standard Certified.
- Includes Sika ViscoCrete HRWR to enhance durability and further optimize the concrete performance.
- Simple dosing with pre-measured, 2.95 lb., water soluble bags (one bag per yard, by volume).



SIKA® WT-240 P

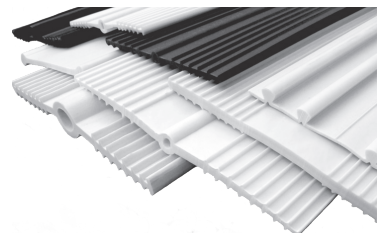
Crystalline Waterproofing Admixture, ACI 212 - Report on Chemical Admixtures for Concrete

- Crystalline based Permeability Reducing Admixture (PRAH) that reduces 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 0.02 in (0.4 mm).
- Up to 85% reduction in permeability (PRAH per ACI 212).
- Meets ASTM C494 Type S.
- NSF 61/ANSI Standard Certified.
- Dosage rate of 2%, by weight of cementitious material (240 P) / 2.5% by weight of cementitious material (240 P RED), dependent on required performance.
- Easy addition using repulpable 12 lb. bags (240 P) / 16 lb. bags (240 P RED).
- SikaControl® WT-240 P RED available for easy identification of treated elements (manholes, utility encasements, vaults).



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 PVC 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 one of our technical specialists at usa.sika.com to find out the best solution for your next project.



SIKA FULL RANGE SOLUTIONS FOR CONSTRUCTION:



WATERPROOFING



CONCRETE



REFURBISHMENT



SEALING AND BONDING



FLOORING



ROOFING

All sales of Sika products are subject to Sika's current Terms and Conditions of Sale available at usa.sika.com or by calling 800-933-7452. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet, which are available at usa.sika.com or by calling Technical Services at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instructions for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

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.

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Contact Sika:

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Our most current General Sales Conditions shall apply.

Please consult the Product Data Sheets prior to any use and processing.

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