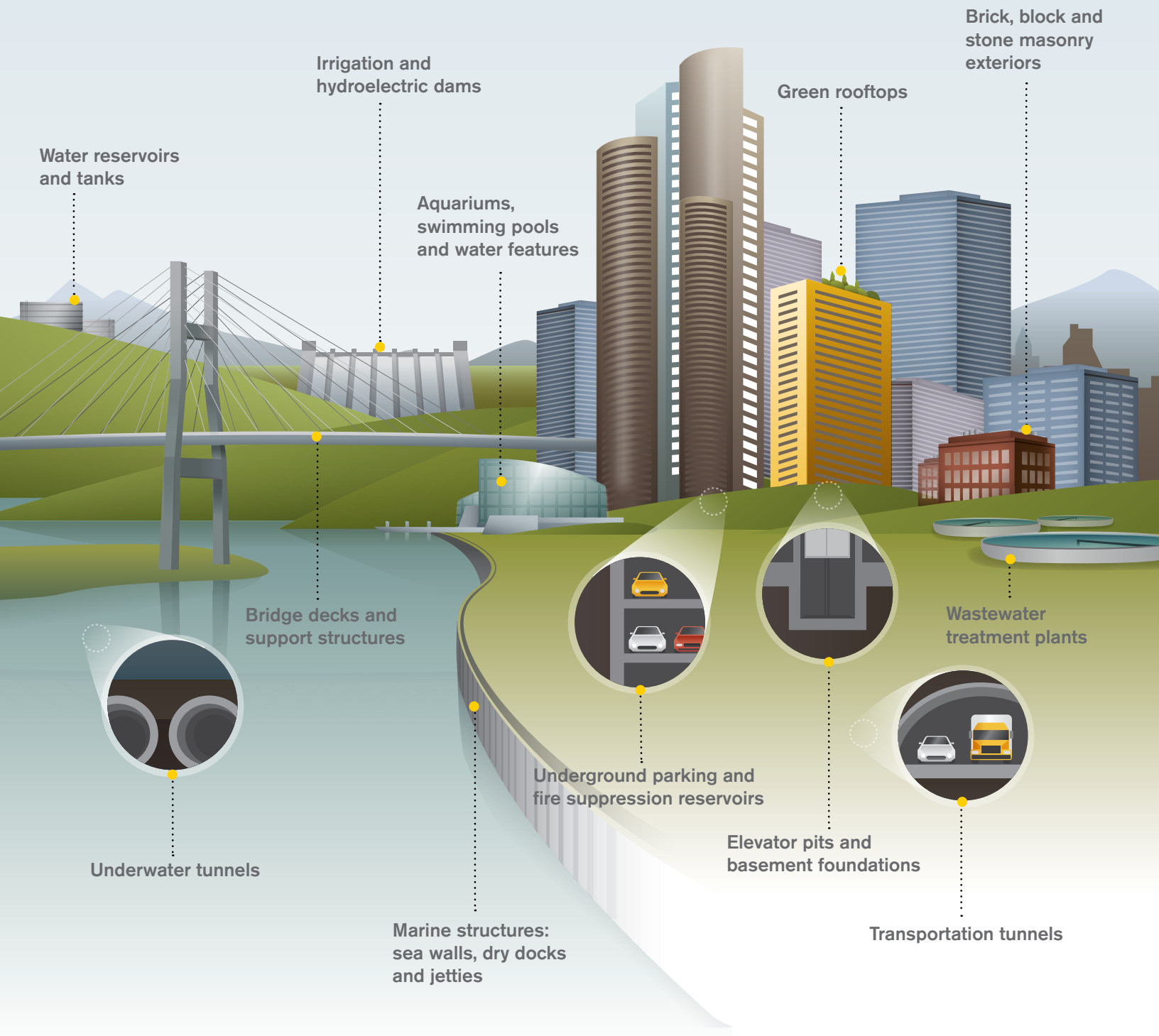


CONCRETE WATERPROOFING SPECIFICATION GUIDE



BE SURE. BE KRYTON.



TAKE THE RISK OUT OF CONCRETE WATERPROOFING

THE SCIENCE OF KRYSTOL® TECHNOLOGY



Kryton's line of concrete waterproofing products use a unique and proprietary blend of Krystol chemicals. Krystol is based on principles that are very similar to the processes that occur during the hydration and hardening of concrete. When cement particles are mixed with water, a chemical reaction occurs where the calcium silicates in cement combine with water to form new compounds. The new compounds are calcium silicate hydrate (CSH) and calcium hydroxide.

The CSH forms as an amorphous microcrystalline structure, extending outward from the individual cement particles and eventually filling the space between them. The CSH crystal formation is the mechanism by which the concrete stiffens and gains strength. It is most dramatic in the first hours after the concrete is placed, but actually continues for weeks, months and even years into the life of the concrete.

The reason that hydration can continue, seemingly indefinitely, is because only a portion of the cement has reacted during the initial hydration and hardening of the concrete. A significant portion of each cement particle remains un-reacted long after the concrete has reached its design strength. It is the un-reacted particles that allow the Krystol chemicals to perform their function. Krystol acts as a catalyst to a larger reaction within the concrete mass.

Krystol forms hydration crystals that form into a crystalline structure of long hexagonal prisms that extend through and fill the capillary voids and micro-cracks of the concrete. The crystals themselves are not made up solely of the Krystol material, but grow from the partially reacted cement particles. This is why the Krystol crystals can travel many inches through the concrete.

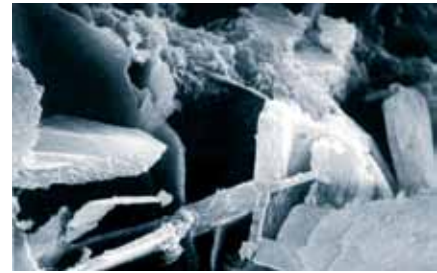
Krystol treatments that have been applied to one side of a concrete wall have been observed to cause crystal growth to occur on the other side of several inches of "solid" concrete. The Krystol chemical is never used up during the crystallization process. As a catalyst, only a very small amount of Krystol is required to grow a very large quantity of crystals. Within the tight confines of the concrete, crystals can easily grow to fill and block the microscopic capillary pores and micro-cracks without using more than a small fraction of the available Krystol chemical. The remaining chemical lies dormant within the concrete waiting for a crack to develop that will provide the necessary space and water source to allow the crystallization process to continue.

When added or applied to concrete, crystalline chemicals create a reaction that causes long, narrow crystals to form, filling the pores, capillaries and hairline cracks of the concrete mass. As long as moisture remains present, crystals continue to grow throughout the concrete, reaching lengths of many inches over time. Once the concrete has cured, the crystalline chemicals sit dormant until another dose of water (such as through a new crack) causes the chemical reaction to begin again.

The ability to reactivate in the presence of water gives crystalline-treated concrete the ability to "self-seal". When cracks form due to curing shrinkage, settling, seismic activity, etc., water entering through them causes new crystals to form and grow, blocking and filling the cracks. Its ability to self-seal cracks is one of crystalline technology's most unique and useful features, and can help to dramatically reduce the long-term maintenance and repair costs of a concrete structure.



Microscopic, needle-like crystals fill the naturally occurring pores and capillary tracts of concrete for guaranteed waterproof structures.



Regular concrete (TOP) VS Krystolized concrete (BOTTOM)

KRYTON: THE MOST EFFECTIVE CONCRETE WATERPROOFING SYSTEM IN THE WORLD.

Only Kryton protects concrete permanently. Our revolutionary self-sealing technology and comprehensive support system transform concrete into an ever-vigilant, waterproof barrier. Short term, you'll shave weeks off construction schedules, cut waterproofing costs by up to 40% and maximize your building footprint. Long term you'll avoid leaks, discoloration and costly callbacks. All of which explains how we can offer an industry leading 25-year warranty. And how nearly 40-year-old Kryton projects are as dry today as when they were first built.

Table of Contents

The Science of Krystol® Technology.....	2
Concrete Waterproofing for New Construction	
Krystol Internal Membrane™ (KIM®) Admixture.....	4
Krystol Broadcast™.....	7
Concrete Waterproofing for Existing Construction	
Krystol T1® & T2® Waterproofing System.....	8
Water Protection for Mortar and Concrete Masonry Units	
Krystol Mortar Admixture (KMA)™.....	9
Concrete Waterproofing for Construction Joints	
Krystol® Waterstop System.....	10
Concrete Repair for Existing Construction	
Krystol® Crack Repair System.....	12
Plasti-Patch™.....	14
Concrete Sealer for New and Existing Construction	
Hydrostop™ Sealer.....	15
Concrete Restoration for Existing Construction	
Hydrostop Restore & Protect System™.....	16
Waterproofing for Shotcrete & Precast Concrete.....	17
Krystol Assurance Program.....	18
Industry Expertise.....	18
Application Chart.....	19

CONCRETE WATERPROOFING FOR NEW CONSTRUCTION

Krystol Internal Membrane™ (KIM)®

Krystol Internal Membrane or KIM is an integral crystalline concrete waterproofing admixture. When combined with water, KIM's proprietary chemicals react to form millions of needle-like crystals. These crystals grow and fill the capillary pores and micro-cracks in the concrete, blocking the flow of water. As time passes and stresses form new cracks, any incoming moisture causes the crystals to reactivate – ensuring continuous waterproofing over the years.

KIM is used in place of externally applied surface membranes to protect against moisture transmission, chemical attack and the corrosion of reinforcing steel.

KIM

- Lowers the cost of waterproofing by as much as 40%
- Helps to shave weeks off of construction schedules
- Reduces the cost of maintenance and repairs
- Increases reliability and quality control
- Increases revenues with a larger building footprint
- Safe for contact with potable water and Certified by NSF to NSF/ANSI Standard 61 Drinking Water System Components – Health Effects



Packaging

5 kg (11 lbs) or 25 kg (55 lbs)
resealable pails

Mixer-ready bags in custom sizes to
match your mix design

Product Codes

KIM-AE: K-300
KIM-HS: K-301
KIM-ES: K-302

A World of Applications

KIM is recommended for all concrete that will be subject to water pressure and can be used in pre-cast, cast-in-place and shotcrete applications.

- Below grade parking
- Basements
- Sewage plants
- Swimming pools
- Dams
- Foundation walls
- Footings
- Slabs
- Pits
- Water containment tanks
- Canals



Marina Bay Sands, Singapore



YVR Aquarium, Vancouver, Canada



Ensenada International Terminal Tunnel,
Ensenada, Mexico

PERMEABILITY REDUCING ADMIXTURES

The most recent version of ACI 212.3R-10: Report on Chemical Admixtures for Concrete includes a new chapter specifically about permeability reducing admixtures (PRAs). PRAs can be divided into two categories:

- PRAN – Permeability Reducing Admixture for Non-Hydrostatic Conditions
- PRAH – Permeability Reducing Admixture for Hydrostatic Conditions

Previous (Informal)	Current (Formal)	Notes*
Waterproofing Admixture	<p>Permeability Reducing Admixture - Hydrostatic Conditions</p> <p>(PRAH)</p>	<p>Water penetration is reduced by a pore blocking mechanism (crystalline growth or polymer plug).</p> <p>The pore blocking materials are sufficiently stable to resist water under pressure.</p> <p>The admixture is suitable for use in watertight construction (basements, water tanks etc).</p>
Damproofing Admixture	<p>Permeability Reducing Admixture - Non-Hydrostatic Conditions</p> <p>(PRAN)</p>	<p>Water absorption is reduced by treatment with water repellent chemicals (soaps, oils) or partial pore blocking (fine particle fillers).</p> <p>Resistance to water under pressure is limited or non-existent.</p> <p>These admixtures are suitable for concrete not exposed to water under pressure.</p>

* Adapted from ACI 212.3R-10, Table - Admixtures, their Characteristics, and Usage (page 2)

* Also appears in Table 7.1 - Design and Control of Concrete Admixtures, 15th edition (2011)

KIM is the only admixture that demonstrates the performance of a hydrophilic crystalline PRAH. KIM provides the highest level of water resistance, self-sealing and field proven longevity, which proves its effectiveness as a PRAH.

Why is KIM the only true PRAH?:

1. KIM has the highest level of water resistance when testing using DIN 1048-5 (permeability test).
2. KIM is the only admixture to independently demonstrate self-sealing properties.
3. KIM has the longest history of being used in the most demanding waterproofing projects.

For more detailed information, see ACI 212.3R-10: Report on Chemical Admixtures for Concrete.

The latest edition of the Portland Cement Association's Design and Control of Concrete Mixtures, 15th edition has also adopted the PRA terminology to describe concrete admixtures.

KIM CONCRETE WATERPROOFING ADMIXTURE COMPARED TO OTHER TECHNOLOGIES

	KIM Concrete Waterproofing Admixture	Water Repelling Admixtures	Densifying Admixtures & Water Reducers	Surface Applied Membranes & Bentonite
Self-sealing of cracks	Yes	No	No	No
Resists high hydrostatic pressure	Yes. Proven up to 140 m (460 ft) of head pressure.	No, but will resist water penetration at low pressures.	Possibly, but provides no protection at joint and crack locations.	Easily compromised by a single puncture or imperfect seam.
Shortens construction schedule	These products come included in the concrete when it is placed. There is no need to schedule installation time. No concerns about delays or other issues caused by an installation sub-contractor			Time must be scheduled for concrete curing, providing access, surface preparation, installation and protection.
Includes integrated joint system	Yes. A crystalline waterstop system is available to fully integrate with the admixture.	These systems do not have an integrated joint system, but may incorporate a third-party joint system at planned joints, such as PVC or swellable waterstop.		These products do not address joints separately.
Surface preparation	No surface preparation required.			Application surface must typically be cured, clean, dry and smooth. Forming oil and curing compounds must be removed. Irregular surfaces can be challenging.
Compromised by poor workmanship	No workmanship required, good concrete placing practices should be followed. (Note that proper concrete mix design is essential. The manufacturer should offer mix design review as part of their overall technical support).			Requires highly skilled and attentive workmanship to avoid errors such as pinholes and poorly lapped seams.
Affected by jobsite conditions	Not affected by jobsite conditions.			May become punctured or torn due to follow-on construction work or backfilling. Installation may also be affected by adverse weather or issues with scheduling or access to the concrete surface.
Ability to repair	Leaks will typically self-seal. Major defects can be repaired directly at the leak location using a proven and compatible crystalline repair system.	Commonly repaired using urethane or epoxy injection. This method is expensive and unreliable.		Typically not accessible for repair. Extremely difficult to locate the leak source. Attempts at injection can make the situation worse by de-bonding the membrane and/or separating its seams.

CONCRETE WATERPROOFING FOR NEW CONSTRUCTION

Krystol Broadcast™

Krystol Broadcast is a crystalline waterproofing treatment for concrete flatwork that is applied dry to the fresh concrete surface and troweled into the concrete during the final finishing. Krystol Broadcast features a unique fugitive dye that highlights where the powder hits the concrete to ensure uniform distribution. The proprietary Krystol chemicals penetrate deeply into the concrete mass protecting it against water access.

Krystol Broadcast

- Permanently waterproofs the concrete
- Withstands extreme hydrostatic pressure
- Protects reinforcing steel against corrosion
- Self-seals minor cracking
- Fugitive dye coloring ensures uniform distribution
- Can be used as a wear surface
- Reaches well below the surface and is not destroyed by surface wear or abrasion
- Finished concrete may be painted or covered with any floor finish as usual
- Safe for contact with potable water, certified by NSF to NSF/ANSI Standard 61 Drinking Water System Components – Health Effects



Packaging

25 kg (55 lbs) resealable pails

Product Code

K-250

A World of Applications

Krystol Broadcast produces a smooth finished floor and is best suited for use on thick concrete slabs that will be power-trowelled during finishing.

- Slabs on-grade or below grade or elevated
- Parking structures
- Marine structures
- Reservoirs
- Water treatment plants
- Pits
- Warehouse & commercial floors
- Basements



Tong Ho Steel Plant, Taiwan

Tong Ho Steel Plant, Taiwan

Tung Ho Steel Enterprise is a major steel manufacturing company and they know that steel and water do not mix. When they were constructing their new plant they chose various Kryton products to target specific problem areas of the plant. To prevent water ingress from the elements they used Krystol T1 & T2 and Krystol Internal Membrane. As well, Krystol Broadcast was applied on the positive side of the driveway which covered over 500 square meters (597 square yards). With Kryton's help, the plant was able to quickly and successfully open its doors. With a complete waterproofing system in place, the Tung Ho Steel plant will be permanently protected from water ingress.

CONCRETE WATERPROOFING FOR EXISTING CONSTRUCTION

Krystol T1® & T2® Waterproofing System

Krystol T1 & T2 System is an "in-depth" concrete treatment that is applied as a slurry, spray or dry-pack to the surface of existing concrete structures. In the presence of water, the special chemicals in Krystol will react with the concrete to grow millions of long, needle-shaped crystals deep into the concrete mass. These crystals permanently block and prevent the passage of water through capillary pores, micro-cracks and joints. The concrete itself becomes the waterproof layer and the surface treatment is not required to remain intact for the system to be effective. As a result, the Krystol T1 & T2 System is extremely durable and will last the lifetime of the concrete.

Krystol T1 & T2

- Completely eliminates the need for costly and labour-intensive surface-applied membranes
- Is ideal for below grade applications, reservoirs and pipelines and can withstand high hydrostatic pressure
- The waterproofing is not affected by surface wear or abrasion and will never require re-application
- Self-seals micro-cracks and stops water ingress
- Safe for contact with potable water and Certified by NSF to NSF/ANSI Standard 61 Drinking Water System Components – Health Effects
- Prevents corrosion



Packaging

5 kg (11 lbs) or 25 kg (55 lbs)
resealable pails

Product Codes

Krystol T1: K-210
Krystol T2: K-220

A World of Applications

Krystol T1 & T2 can be used with recently poured or decades old concrete. It is the ideal choice for waterproofing concrete foundations and walls, elevated slabs and ramps, parking structures, water towers and bridge decks.

- Foundations
- Walls
- Elevated slabs and ramps
- Parking structures
- Water towers
- Bridge decks
- Tanks



Sichuan Tunnels, China



Atlantis Hotel, Dubai, UAE



Alakanada Dam, India

WATER PROTECTION FOR MORTAR AND CONCRETE MASONRY UNITS

Krytol Mortar Admixture (KMA)[™]

Krytol Mortar Admixture is specially formulated to provide long-term protection in cementitious mortar by reducing both permeability and absorption. Building maintenance and repair costs can be significantly decreased by improving durability and by preserving the original appearance. It contains Kryton's unique and proven Krytol technology to simplify installation and provide superior performance such as the ability to self-seal minor cracks and withstand water under pressure.

Krytol Mortar Admixture

- Lowers upfront building costs compared to surface applied sealers
- Simplifies installation, eliminating labour, and shortening the construction cycle
- Increases the life of your mortar and decreases building maintenance and repair costs
- Increases durability and delivers a permanent solution with materials designed to last the lifetime of the mortar
- Maintains the original appearance and cleanliness for lasting building attractiveness



Packaging

15 kg (33 lbs) resealable pails

Product Code

K-309

A World of Applications

Use KMA to provide permanent protection for:

- Rendering and plastering mortar (including stucco and other thin topping mixes) over concrete masonry walls or other prepared substrates
- Masonry mortar (i.e., mortar that goes between the masonry units)
- Concrete masonry units (i.e., bricks and blocks when they are manufactured)



Platinum Tower, Beirut, Lebanon



Byrne House, County Donegal, Ireland



Royal Mills Riverpoint Apartments, West Warwick, USA

CONCRETE WATERPROOFING FOR CONSTRUCTION JOINTS

Krytol® Waterstop System

Using Kryton's proven integral crystalline waterproofing technology, the Krytol Waterstop System forms an impenetrable, watertight seal at all joints. Comprised of two products, Krytol Waterstop Grout and Krytol Waterstop Treatment, the Krytol Waterstop System succeeds where others fall short.

For maximum results, Krytol Waterstop Treatment and Grout should be used together. By applying the grout in a triangle-shaped strip, allowing it to cure and then using a layer of Krytol Waterstop treatment, the Krytol technology immediately goes to work blocking water ingress.

Krytol Waterstop System

- Provides a permanent waterproof solution at construction joints
- Costs less than barrier systems
- Withstands extreme hydrostatic pressure
- Is durable and not prone to jobsite damage
- Is easy to install (up to 100 ft per hour)
- Safe for contact with potable water and Certified by NSF to NSF/ANSI Standard 61 Drinking Water System Components – Health Effects
- Adapts to curves and uneven surfaces
- Easy to inspect before and after concrete has been poured



Packaging

Both Krytol Waterstop Grout and Krytol Waterstop Treatment are available in:
5 kg (11 lbs) or 25 kg (55 lbs) resealable pails

Product Codes

Krytol Waterstop Grout Internal: K-322i
Krytol Waterstop Grout External: K-322x
Krytol Waterstop Treatment: K-321

A World of Applications

Use Kryton's joint waterproofing system to waterproof and protect:

- Static concrete-to-concrete joints where there is any concern regarding water penetration
- Preplanned and unintended shotcrete cold joints
- Crack control joints



TreePeople Center Cistern, USA



CityCenter, Las Vegas, USA



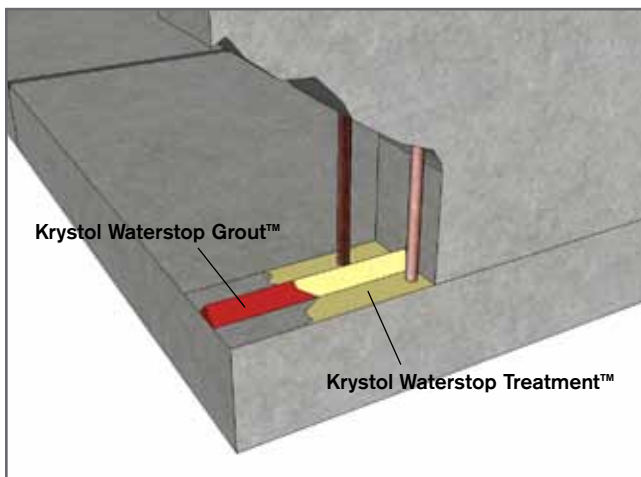
Woodward's Redevelopment, Vancouver, Canada

KRYSTOL WATERSTOP SYSTEM

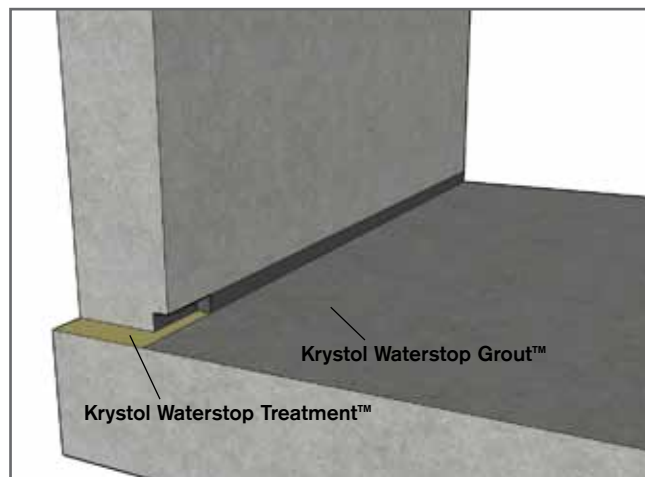
COMPARED TO OTHER TECHNOLOGIES

	Krystol Waterstop System	Bentonite Waterstops	Swellable Rubber Waterstops	Urethane Waterstops
Can the waterstop handle concrete pours?	Will not be dislodged by subsequent pours.	Can be dislodged by subsequent pours. Concrete should not be poured directly on the waterstop.		
Does application require a smooth dry surface?	Does not require dry conditions or a smooth surface.	Yes, application requires dry weather and a smooth dry surface.	Even concrete surfaces are required.	
Other materials required	No other materials required.	Yes, may require a primer and glue or nails for application.	Yes, primers may be required.	No other materials required.
Does rain have an effect on the waterstop?	No, can be applied well in advance of subsequent pours.	Rain can lead to hydration and premature expansion – concrete has to be poured immediately after application	Rain can lead to hydration and premature expansion. But concrete should be poured after a 24 hour curing time.	

The Krystol Waterstop System can be applied either using an internal or external method depending on preference and design.



Internal (Triangle) Method – For most common applications.



External (Wedge) Method – For applications where the internal triangle cannot be used.

CONCRETE REPAIR FOR EXISTING CONSTRUCTION

Krystol® Crack Repair System

Unlike other concrete crack repair systems, Kryton's Krystol Crack Repair System protects from any direction, even against high water pressure. Because the system can be applied to either side of the concrete, there are no limits when it comes to repairing or waterproofing hard or impossible to reach areas. Using Krystol Plug, Krystol T1 and Krystol Bari-Cote, Kryton's Krystol Crack Repair System can be put to work wherever the cracks are found and is truly the only permanent crack repair system.

Krystol Plug: A powder that, when mixed with water, can be used to immediately stop water flow through concrete cracks.

Krystol T1: A cementitious, brush-applied treatment for concrete that contains Kryton's renowned integral crystalline waterproofing chemicals.

Krystol Bari-Cote: A fast-setting waterproof grout designed to repair leaking cracks, holes and joints.



Packaging

Krystol Plug, Krystol T1 and Krystol Bari-Cote are available in 5 kg (11 lbs) or 25 kg (55 lbs) resealable pails

Product Codes

Krystol Plug: K-620

Krystol Bari-Cote: K-315

Krystol T1: K-210

A World of Applications

Use Krystol Plug, Krystol T1 and Krystol Bari-Cote together to repair leaking cracks in concrete. Components of the system can also be used to:

- Repair leaking cracks or construction joints
- Firmly anchor bolts and ornamental iron
- Seal around pipes and metal fixtures in masonry concrete
- Repair spalled or honeycombed concrete
- Use as a waterproof plaster on masonry walls
- Plug and seal construction form tie holes



Aura Pool, Mexico



The Pearl-Qatar, Doha, Qatar



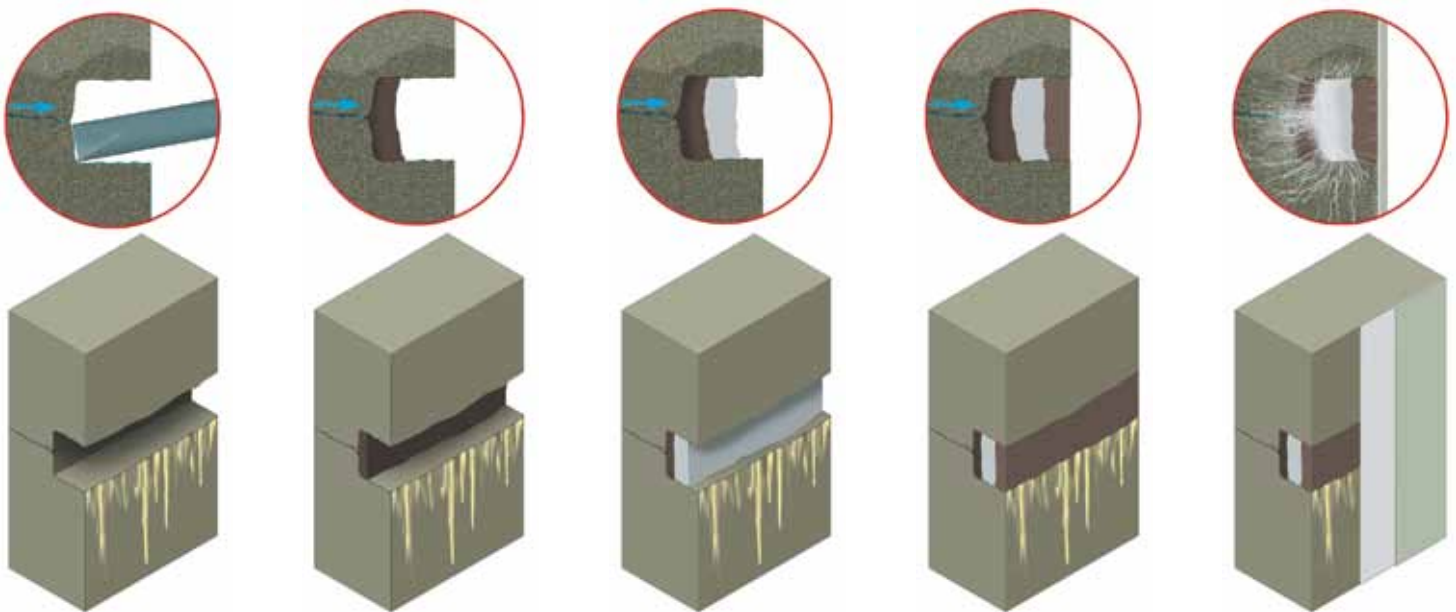
Madushan Dam, Yunnan Province, China

CONCRETE REPAIR

WITH THE KRYSTOL CRACK REPAIR SYSTEM

At best, concrete cracks are just an unattractive nuisance. At worst, they lead to leaks that can damage the interior of the building, corrode steel reinforcements and ultimately shorten the life of the concrete structure.

Kryton's Krystol Concrete Waterproofing System is the complete way to repair cracks and create durable, waterproof structures.



Step 1: Clean and prepare the crack or joint.

Step 2: Stop water with Krystol Plug.

Step 3: Install Krystol T1.

Step 4: Install Krystol Bari-Cote.

Step 5: Finish with Krystol T1 & T2 coating.

“For a long time, the basement of these two buildings would flood with up to a foot of water, especially at high tide. About 6 months ago, the elevator pits, storage room, boiler room and compacting room were all waterproofed using the Kryton Krystol waterproofing system, namely the T1, T2, Bari-cote and Plug.

For the first time, we have a substantially dry basement area, and the results have been excellent. I would recommend these products.”

- George Dambakly, Manhattan Apartments, New York, USA

CONCRETE REPAIR FOR EXISTING CONSTRUCTION

Plasti-Patch™

Plasti-Patch is a single component, self-bonding, high strength concrete patching and repair mortar for concrete and masonry.

This high-strength concrete patch comes in a powder, that when combined with water, seals chips, cracks and other imperfections in concrete. Highest bonding single component grout.

Plasti-Patch

- High flexural strength, impact resistance and compressive strength
- Resistant to wet freeze-thaw cycles
- Does not shrink after placement
- Excellent bonding properties
- Contains no calcium chloride
- Does not rely on two component system for strong polymer bond
- Easy to mix and install



Packaging

5 kg (11 lbs) or 25 kg (55 lbs)
resealable pails

Product Code

K-511

A World of Applications

The versatility of Plasti-Patch makes it an ideal product for filling and repairing form tie holes, pipe sleeve holes, honeycombs, post tensioned pockets and cracks. It can also be used to:

- Finish walkways and driveways
- Fix chipped columns
- Fix uneven form marks
- Repair damaged concrete elements
- Strengthen other weak mixes as an additive
- Typically used in areas exposed to high wear and tear to provide a high-strength topping



Russian Orthodox Church, New York, USA



University of Massachusetts Amherst - Boyden Tunnel, USA

CONCRETE SEALER FOR NEW AND EXISTING CONSTRUCTION

Hydrostop™ Sealer

Hydrostop Sealer is a clear, water-based sprayable liquid which activates a water repellent effect on the surfaces of concrete, brick, mortar and masonry. Hydrostop Sealer works better and lasts much longer than conventional sealers because it contains a unique blend of silane and siloxane compounds which chemically react with silicates below the surface of the substrate. This reaction forms an insoluble, water-repellent barrier within the surface that cannot wear away, fade, yellow, crack or peel. The finished application is virtually invisible, leaving the surface with its original appearance and breathability.

Hydrostop Sealer

- Is cost-effective and outlasts other sealers
- Provides excellent water repellency and keeps water out of your structure
- Does not change the appearance of the surface
- Works as a chloride screen to protect against damage from de-icing salts, sea water, etc.
- Helps to protect reinforcing steel from corrosion
- Resists acid rain and other chemicals
- Helps to prevent freeze or thaw damage
- Resists mildew and moss formation, rust stains and efflorescence
- Requires no special tools to apply
- Can be used for outdoor or indoor and enclosed applications with minimal odour



Packaging

18.9 L (5 US gallons) pails or
208 L (55 US gallons) drums

Product Code

K-773

A World of Applications

Hydrostop Sealer can be used in conjunction with the Hydrostop Restore & Protect System to extend the lifespan on aging concrete infrastructure or it can be used on its own to protect:

- Bridge decks and supports
- Parking structures
- Concrete, block or brick walls and chimneys
- Driveways, including exposed aggregate
- Sidewalks, patios, balconies, steps
- Concrete pavers and retaining walls
- Marine floats and docks
- Stucco walls
- Concrete roof tiles and unglazed floor tiles
- Asbestos cement
- Use to treat any masonry surface made from concrete, brick, mortar, grout, tile, terra-cotta, plaster, stone, and limestone.



Channel M Building, Vancouver, Canada



Vancouver Public Library, Vancouver, Canada

CONCRETE RESTORATION FOR EXISTING CONSTRUCTION

Hydrostop Restore & Protect System™

Hydrostop Restore & Protect System greatly extends the useful life of aging concrete infrastructure and buildings, improves overall aesthetics and offers a more environmentally sustainable alternative to major rehabilitation or total replacement. The Hydrostop Restore & Protect System consists of three products:

1. Hydrostop Grout: A non-shrink, waterproof grout used to repair surface cracks.
2. Hydrostop Coating: A 2-part polymerized cementitious topping mortar used to provide a strong and durable barrier against water intrusion.
3. Hydrostop Sealer: A sprayable liquid which activates a water repellent effect.

Hydrostop Restore & Protect System

- Reduces the cost of maintenance and repairs
- Avoids costs of building replacement and prevents disruption to facility and building operations
- Increase your environmental sustainability
- Decreases the application costs (easy-to-use system)
- Increases environmental sustainability by extending the lifespan

Packaging

Hydrostop Grout

- 18 kg (40 lbs) resealable pails

Hydrostop Coating

- Part A: 12.7 kg (28 lbs) pails
- Part B: 3.8 L (1 gal) jugs
- Total kit size: 16.5 kg (36 lbs)

Hydrostop Sealer

- 18.9 L (5 US gallons) pails
- 208 L (55 US gallons) drums

Product Codes

Hydrostop Grout: K-710

Hydrostop Coating

- Part A: K-720-A & K-725-A
- Part B: K-720-B

Hydrostop Sealer: K-773

A World of Applications



Extend the lifespan of aging concrete infrastructure such as hydroelectric facilities and transportation structures.

Restore and protect aging concrete buildings such as churches, mosques, and any other concrete or mortar rendered finish.

Hydrostop Restore & Protect was developed in conjunction with BC Hydro in British Columbia, Canada during the repair and restoration of the Bridge River complex, which includes a dam, powerhouse and generating station.

BC Hydro's Bridge River Complex, Canada

"The Hydrostop System is a cost effective way to extend the life of concrete that is showing signs of deterioration due to continual ingress of water"

says Rob Emlyn, Project Manager for WRDE Management Ltd.



WATERPROOFING FOR SHOTCRETE & PRECAST CONCRETE

Waterproofing Shotcrete Concrete

Shotcrete is the preferred material in the construction of many structures from foundations up, to tanks and pools and everything in between. Shotcrete is an effective way of saving time and money because it involves half the forming and equipment of regular cast-in-place methods and when you add KIM to the shotcrete mix you combine the waterproofing step which:

- **Eliminates on-site preparation** for apply dated external waterproofing membranes.
- **Increase jobsite productivity** by having the waterproofing already in the shotcrete.
- **Mitigates concerns over damaging external waterproofing membranes** during the shotcrete application.
- **Eliminates the need for detailing** around soil nails.



Waterproofing Precast Concrete

Add Krystol Internal Membrane (KIM) to your water and building precast concrete units and you will benefit from products that arrive at the jobsite pre-waterproofed.

Adding KIM:

- Is the **environmental choice** - Safe for potable water (certified by NSF to NSF/ANSI Standard 61) and non-toxic
- Provides a **permanent solution** – Impervious to physical damage or deterioration, self-seals micro-cracks
- **Protects reinforcing steel** – Prevents the penetration of waterborne contaminants and chloride-laden liquids that cause the corrosion of reinforcing steel
- Provides **crack resistance and reduction** – Reduces shrinkage and cracking during the plastic and curing stages, increasing quality and longevity of concrete
- Provides **freeze-thaw durability** – Improves durability through high-quality air-entrainment that mitigates the effect of expansion and contraction of freezing water within concrete
- **Outperforms the competition** – Leader in head to head tests for resistance to hydrostatic pressure and self-sealing abilities
- Provides **self-healing ability** – KIM will reactivate in the presence of moisture to seal new cracks even years later
- **Prolongs the life of the concrete** – Improves durability, protects reinforcing steel and resists hydrostatic pressure



WE'VE GOT YOU COVERED.

Build Confidently with Kryton.

Kryton offers the best-in-industry warranty that guarantees Krystol-treated areas of your structure will remain watertight during the warranty period. Our standard warranties include the leading 25-year warranty for our Krystol Internal Membrane (KIM) admixture and 10-year warranty for our surface applied products. Want further assurance? Kryton has the only crystalline waterproofing admixture associated with projects that have outlived their warranties.



The Boeing Development Center was constructed using KIM in 1983 and has well out lived its warranty.



All Kryton products are covered by our standard warranty, which guarantees every product is free from defects of manufacture. Our extended Krystol Assurance Program is a 10-year warranty that covers all labour and materials required to repair any leaks that occur at no cost to the owner or builder.

Industry Expertise

Kryton not only meets industry standards such as ICC-ES and NSF International, we help raise them. We work with industry, academic and government bodies around the world to develop certification standards and testing methodologies.

	<p>British Board of Agreement (BBA) – No 05/4217 Krystol Internal Membrane – HS (KIM-HS) a reactive crystalline admixture used to provide watertight concrete.</p>
	<p>European CE Mark (CE) – Krystol Internal Membrane – HS (KIM-HS) meets all applicable European Union directives, safety guidelines and quality standards.</p>
	<p>NSF – Krystol products are certified by NSF to NSF/ANSI standard 61 Drinking Water System Components – Health Effects. NSF is a widely respected worldwide certification provider that develops national standards for food, indoor air, environment and water.</p>
	<p>GB Standard – Chinese national standards issued by the Standardization Administration of China (SAC), the Chinese National Committee of the ISO and IEC. Mandatory standards are prefixed “GB”.</p>
	<p>Dubai Municipality (UAE) – Krystol International Membrane (KIM) has received a “Technical Approval Certificate” from the Dubai Central Laboratory Department as a concrete admixture to enhance water resistance and durability of concrete.</p>
	<p>International Code Council - Evaluation Service (ICC-ES) – Krystol Internal Membrane (KIM) was the first chemical concrete admixture certified by ICC-ES, a non-profit U.S. organization that reviews and evaluates building products, materials and methods to ensure they comply with applicable building codes.</p>

KRYTON HAS YOUR SOLUTION

Kryton products are proven in the harshest environments from buildings to dams to tunnels, our products work from the outside in and inside out, to seal cracks and improve the durability of concrete structures.

	Krytol Internal Membrane™	Krytol Broadcast™	Krytol T1® & T2® Waterproofing System	Krytol® Waterstop System	Krytol Mortar Admixture™	Hydrostop™ Sealer	Krytol® Crack Repair System	Hydrostop Restore & Protect System™	Plasti-Patch™
New Construction									
Water reservoirs & tanks	■	■	■	■					
Dams	■	■	■	■					
Wastewater treatment plants	■	■	■	■					
Aquariums	■	■	■	■					
Water features	■	■	■	■					
Swimming pools	■	■	■	■					
Green roofs	■	■	■	■					
Tunnels	■	■	■	■					
Underground parking garages	■	■	■	■					
Brick, block & stone masonry exteriors					■	■			
Bridge decks & support structures	■		■			■			
Foundations and basements	■	■	■	■					
Marine structures	■	■	■	■					
Elevator pits	■	■	■	■					
Shotcrete	■								
Precast	■								
Above grade				■	■	■			
Existing Construction									
Water reservoirs & tanks			■				■		
Dams			■				■		
Wastewater treatment plants			■				■		
Aquariums			■				■		
Water features			■				■		
Swimming pools			■				■		
Green roofs			■				■		■
Tunnels			■				■		
Underground parking garages			■			■	■		■
Brick, block & stone masonry exteriors					■	■		■	
Bridge decks & support structures			■			■	■		■
Foundations and basements			■				■		■
Marine structures			■			■	■		
Elevator pits			■				■		
Hydroelectric facilities								■	
Transportation structures								■	■
Above grade					■	■		■	■

Offices in Canada, USA, UK, Singapore,
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