



WATERPROOFING STRUCTURAL SHOTCRETE WITHOUT A MEMBRANE



BE SURE. BE KRYTON.



THE PROBLEM:

Why is waterproofing structural shotcrete so difficult?

1. Shotcrete is commonly applied to a blind-wall form and there is no access to apply a membrane
2. Membranes that are hung on the form and shot against risk damage and/or torn seams
3. Membrane installation adds time and money
4. It is difficult to reliably waterproof around pipes and other penetrations
5. Shotcrete is known to shrink and crack more than cast-in-place

THE SOLUTION:

Using Krytol Internal Membrane (KIM) to waterproof structural shotcrete instead of a membrane

1. **Reduce Risk:** KIM is mixed into and becomes a permanent part of the shotcrete and so there is no risk of damage to waterproofing system
2. **Build Faster:** KIM allows for faster construction as there is no need to schedule installation or wait during delays
3. **More Practical:** KIM is an integral waterproofer and so there is no need to access the blind side of the shotcrete
4. **Reduces Cracking:** KIM treated shotcrete is proven to reduce cracking due to shrinkage
5. **Reliably Waterproofs Around Pipes and Penetrations:** The KIM waterproofing system can reliably waterproof around pipes and other penetrations
6. **Protects Against Corrosion:** KIM is proven to protect steel reinforcement from corrosion
7. **Enhances Durability:** KIM will enhance the durability of the shotcrete by protecting it from deleterious chemicals
8. **Kryton Offers the Industry-Leading 25-year Manufacturer's Warranty**

DID YOU KNOW?

Structural shotcrete is becoming a preferred concreting method in foundation construction, building tanks, parking garages and many other structures because it's up to 50% faster than conventional cast in place.



ADDITIONAL BENEFITS OF USING KRYTON'S SHOTCRETE CONCRETE WATERPROOFING SYSTEM

- **Increases your Profitability:** No need to go back and repair leaks that are common with shotcrete structures waterproofed by membranes.
- **Peace of mind:** Kryton's Dedicated One-Stop-Shop Expertise mitigates risk. Kryton's knowledge and expertise of specific shotcrete details including waterproofing construction joints, penetrations and other tricky details ensure the delivery of a completely tanked and waterproofed concrete structure from a single partner. Kryton Takes the Risk Out of Concrete Waterproofing.

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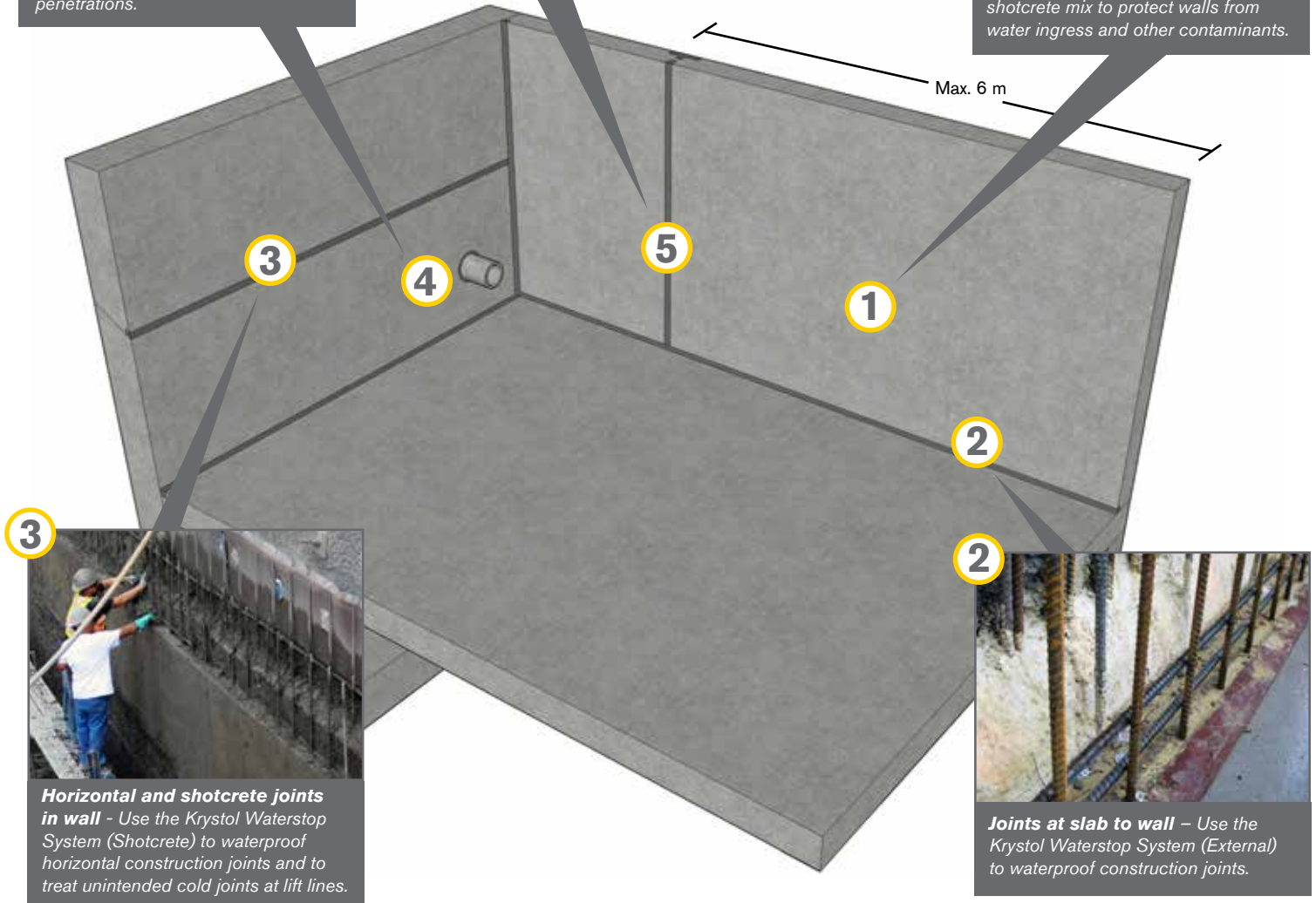
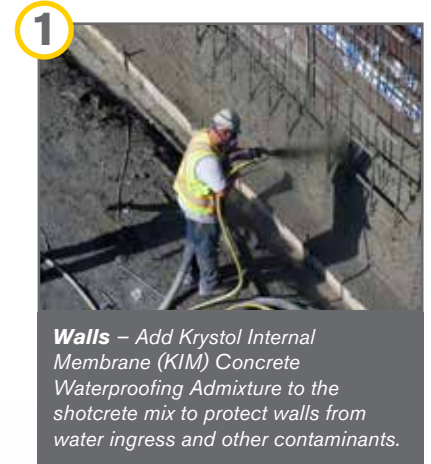
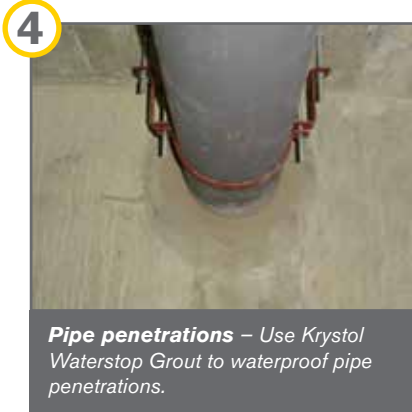
“...compared to membranes or other admixtures, Kryton's KIM offers superior performance due to its unique crystal self-sealing technology being able to both reduce shrinkage during the curing process combined with reduced cracking. This has enabled us to build watertight structures with greater confidence and time savings.”

- Gary Hawkins, Torrent Shotcrete Structures Ltd.

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BUILD BETTER WITH KRYTON WATERPROOFING

Although, shotcrete structures can be challenging to waterproof, Kryton's experience and systemic approach has all the details covered. There are many considerations to take into account that are different from waterproofing structures that are built using cast in place concrete. Rebar stabilization, shadowing, experienced and attentive nozzlemen, proper concrete mix designs, climate, construction joint details, penetrations, and cracking, are just a few items that need to be addressed differently when dealing with shotcrete compared to cast in place. Most membrane waterproofing systems do not address the differences in concrete placement and the result of doing it wrong can lead to costly repairs.



Kryton has all these details covered. Kryton International Inc. provides the most effective concrete waterproofing systems in the world. With over 40 years of experience, and more than 10,000 successful waterproofing projects, Kryton is recognized and acknowledged as the leader in taking the risk out of concrete waterproofing.

THREE OF MANY SUCCESSFUL PROJECTS



VanDusen Botanical Gardens Visitor Centre,
Vancouver, B.C., Canada

The visitor center was built to exceed LEED (Leadership in Energy and Environmental Design) Platinum status and pursue the Living Building Challenge, which defines the highest measure of sustainability for built environments. Kryton's Krystol Internal Membrane (KIM) concrete waterproofing admixture was used to waterproof the site's water cistern as well as the wall behind the rammed earth wall. Kryton's Krystol Waterstop System for joints was also used to fully tank the site's water cistern.

Winner of the 2012 Outstanding Shotcrete Project

Project of the Year for Infrastructure from the American Shotcrete Association



Knight Theater Pedestrian Tunnel,
Charlotte, NC, USA

Several waterproofing systems were considered for the new pedestrian tunnel, including HDPE membrane, PVC membrane, double-bonded spray-applied cementitious membrane and cementitious concrete admixtures. After evaluating the cost and constructability issues of these methods, a combination of two systems were selected to achieve the specified and desired results. It was decided to use Kryton's Krystol Internal Membrane (KIM) in the structural shotcrete walls and invert concrete slab of the tunnels and then apply a double-bonded spray-applied membrane to the walls.



The Carlyle Residences,
Los Angeles, CA, USA

Home to Bruce Willis and Larry King among others, the 24-story Carlyle Residences features price points from \$2.9 million to \$15 million. The four level parking structure is equipped with a modern elevator system that leads owners to their respective suites without so much as a single hallway. The building's placement above an active aquifer challenged the architects and their design concept. The project stakeholders chose to waterproof every portion of the below grade areas with Kryton's waterproofing systems. The parking structure was constructed by KIM-treated shotcrete eliminating the need for conventional membranes. Control cracks were intentionally implemented, and those were addressed using Kryton's Crack Repair System and all joints were treated with Kryton's Krystol Waterstop System. When addressing all tie-holes and beam pockets, Kryton's detailed application instructions were helpful in safeguarding those areas.

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