



Concrete Waterproofing  
by Crystallization™

GENERAL CONSTRUCTION  
FOUNDATIONS



## Meeting the Challenge

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# Protecting Foundations

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The structural integrity of building foundations, whether deep or shallow, can be seriously compromised by hydrostatic pressure and water leakages associated with high water tables. Inadequate waterproofing, cracking and joint failure are problems that will result in the deterioration of concrete and the leaking of water into the substructure. In the short term, this can lead to the loss of sub-structure functionality and, over time, the structural weakening of the building itself. Xypex has an extensive track record in the waterproofing and protection of building foundations. From single-unit housing to high-rise structures, Xypex is recognized by major contractors as a key supplier to the construction industry. Xypex's non-toxic Crystalline Technology protects thousands of foundations worldwide. Whether used for new construction or the rehabilitation of existing structures, Xypex has gained an exceptional reputation for protecting the structural integrity of concrete, and resisting water leakage even under extreme hydrostatic pressure.





# The Structures – The Problems

Xypex products play a key role in the waterproofing of concrete against water leakage, even against extreme hydrostatic pressure. The unique Xypex technology also protects concrete against the effects of sulfate attack and crack or joint failure.

## Protecting Foundations

The waterproofing and protection of concrete in building foundations has the following objectives:

*To prevent the passage of water through the concrete due to hydrostatic pressure so as to protect the interior of the substructure from water-damage, and the reinforcing steel from corrosion. Depending on the local environment, concrete should also be protected from sulphate attack, and chloride attack in marine environments.*

The nature of concrete and its installation means having to deal with permeability problems created by the natural porosity of the concrete as well as defects (faulty cold and construction joints, honeycombs, rock pockets and tie holes), joint leaks, freeze/thaw damage and drying shrinkage cracks. These problems typically leave the structure open to active leaks and accelerate the possibility of reinforcing steel corrosion and surface deterioration.

Leaking basements



Leaking through cracks / joints



Construction defects  
(rock pockets, honeycombs & untreated tie holes)



## Affected Areas

Structural Walls



Mat Slabs



Footings



Slab-on-grade



Pile Caps



Raft Slabs



# The Permanent Solution



CONCRETE UNTREATED



CRYSTALLIZATION INITIATED



CRYSTALLIZATION MATURE



## Xypex Crystalline Technology

Xypex products use the natural porosity of concrete and chemical diffusion to penetrate its pores and capillaries. Inside the concrete, Xypex chemicals react with unhydrated cement particles and the by-products of cement hydration to form a non-soluble crystalline structure deep within the substrate. In this condition, the concrete becomes impermeable, preventing the penetration of liquids and chemicals from any direction even under extreme hydrostatic pressure. The chemical resistant properties of the crystalline structure will mitigate the attack of sulphates and chlorides that may be present in subsoils and waters.



## Proven Performance Worldwide

Comprehensive quality systems and standards along with thorough testing in the lab and the field have resulted in Xypex's highly respected position in the concrete industry. Xypex has been extensively tested by independent testing laboratories in the U.S., Canada, Australia, Japan, Europe and other countries.



## The Xypex Advantage

Xypex Crystalline Technology works inside the concrete, thus avoiding typical problems associated with traditional barrier products.

✓ Permanent and reactivates whenever water is present	✓ Requires no additional protection as with preformed membranes
✓ Self-heals static cracks up to 0.4 mm (1/64")	✓ Resistant to chemical attack
✓ May be applied on negative or positive side of concrete surface	✓ Not subject to deterioration problems encountered by surface coatings and membranes

# The Right Products

## Xypex Admix Advantages

- Permanent integral waterproofing
- Enhances concrete durability
- Value engineering
- Non-toxic
- Resists damaging effects of water penetration and chemical attack



## Xypex Coating Advantages

- Doesn't require a dry surface
- Apply to either side of the concrete
- Won't puncture, blister or tear
- No costly surface priming or leveling
- Sealing, lapping & finishing, protection during backfilling not required
- Permanent waterproofing
- Enhanced concrete durability
- Doesn't contain VOCs

## Other Accessory Products

- FCM 80
- Megamix I & II
- Gamma Cure
- Xycrylic Admix

## Xypex Admix for New Concrete Construction

Xypex Admix is the preferred choice for installing Xypex Crystalline Technology into new concrete structures for building foundations. Because Xypex Admix is blended into the mix at the time of batching, it becomes an integral part of the entire concrete matrix, thus reducing the potentially damaging effects of water penetration and chemical attack. Xypex Admix can be installed in pre-cast elements, cast-in-place structures or added to shotcrete concrete mixtures.



Precast



Cast-in-place



Shotcrete

## Rehabilitation & Repair

Xypex's coating systems and repair products enable owners, engineers and contractors to economically and confidently repair damaged and leaking below grade structures, even from the negative side. Xypex Concentrate and Modified are applied as slurry coatings to the surface of the concrete. Unlike other materials that need a dry substrate, Xypex products require a moist surface – a condition typical of leaking substructures. Xypex Patch'n Plug, Concentrate Dry-Pac and Megamix products are specifically designed to permanently repair concrete defects such as honeycombs, static cracks and faulty cold or construction joints. These products are also effective at filling tie-holes and sealing around pipe penetrations.



Coating  
Concentrate & Modified



Plugging  
Patch'n Plug



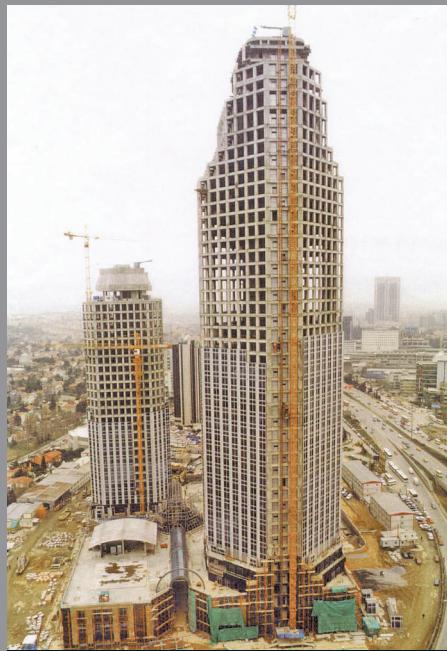
Rehabilitation  
Patch'n Plug & Megamix



Visit us online at [xypex.com](http://xypex.com) for more info & product details.



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