Building Product Systems

Waterproofing & Concrete Restoration
Decorative Coatings
Moisture Vapor Remediation & Flooring
Injection Grouting

Crystalline & hydrophobic liquid waterproofing admixtures for concrete structures
The next generation of integral waterproofing admixtures

AQUAFIN®-IC-ADMIX is the world’s first liquid crystalline waterproofing admixture for concrete.

Now we have developed the next generation: AQUAFIN®-IC-ADMIX-Plus.

AQUAFIN®-IC-ADMIX-Plus is the first crystalline admixture with added hydrophobic properties that creates concrete which is “instantly” water resistant.

Both products are based on innovative crystalline technology which reacts with moisture and free lime, creating millions of nanocrystals. The crystals grow throughout the concrete matrix, sealing the voids and making the concrete structure waterproof yet breathable.

Unlike powder admixtures, AQUAFIN®-IC-ADMIX and AQUAFIN®-IC-ADMIX-Plus completely eliminate the risk of clumping, and ensure even distribution of the waterproofing throughout the concrete structure. They can be added to concrete during the batching process at the concrete plant or at the construction site to a ready-mix truck with full mixing capabilities.

AQUAFIN®-IC-ADMIX and AQUAFIN®-IC-ADMIX-Plus become a permanent, integral part of the concrete, extremely resistant to high hydrostatic pressure. In addition to waterproofing, they significantly increase the freeze-thaw resistance of concrete, while protecting reinforcement from the corrosive effects of moisture.

AQUAFIN®-IC-ADMIX and AQUAFIN®-IC-ADMIX-Plus substantially reduce the amount of time and labor associated with applying traditional waterproof coatings, making a perfect waterproofing solution for large concrete structures.

Typical applications include water tanks, water catchment basins or wastewater treatment facilities, parking structures, tunnels and waterproofing of foundation walls and slabs.

Floating concrete docks in Hamburg, Germany’s harbor poured with AQUAFIN®-IC-ADMIX-Plus modified.

A large foundation wall and slab project done with AQUAFIN®-IC-ADMIX-Plus.

AQUAFIN®-IC-ADMIX added onsite and poured in Havre de Grace, MD.

AQUAFIN®-IC-ADMIX added onsite for gunite application in Denver, CO.
A static crack in the concrete.

As water enters the crack it is sealed due to the crystalline growth promoted by the chemistry within AQUAFIN®-IC-ADMIX and AQUAFIN®-IC-ADMIX-Plus.

Reduced water penetration

Test results prove that adding AQUAFIN®-IC-ADMIX or AQUAFIN®-IC-ADMIX-Plus to concrete reduces water penetration by up to 60%, as illustrated. Control cubes experienced water penetration rates of up to 10 mm (0.4"), while the AQUAFIN treated cubes only had water penetration rates of max. 2 mm (0.08").

Active crack sealing

As water finds its way into the cracks, the crystalline reaction is activated, forming nanocrystals within the crack which seals it and prevents further flow of water.

During a comprehensive trial, concrete cubes were created using AQUAFIN®-IC-ADMIX and AQUAFIN®-IC-ADMIX-Plus. Cracks were created in the cubes, which were then placed into testing equipment and subjected to constant water pressure.

All cubes made with the AQUAFIN®-IC-ADMIX and AQUAFIN®-IC-ADMIX-Plus displayed an automatic crack "self sealing" effect of cracks from 0.2 to 0.4 mm within a reasonable time frame. In contrast, the cracks in the control cubes (which were created without any additives and subjected to the same testing) did not display a reduction in water penetration rates or "self sealing" of cracks.
Integral Building Envelope Waterproofing

By taking a complete systems approach it is easy to seal the entire building envelope in an efficient manner. Combining waterproof concrete with the right joint details provides designers with multiple options of delivering dry structures.

Cost saving designs are achieved by eliminating the use of traditional waterproofing membranes, however when special conditions require subsequent coatings, the treated concrete can be coated with a variety of products, including waterproof coatings and architectural or elastomeric finishes.

Advantages:

- Protects rebar against corrosion
- Less surface discoloration compared to other crystalline admixtures (AQUAFIN®-IC-ADMIX-Plus)
- Self healing of static cracks
- Does not affect bond of subsequently applied coatings
- Easy to mix with concrete, liquid – no risk of clumping
- Breathable – not a vapor barrier
- NSF/ANSI 61 certified for potable water (AQUAFIN®-IC-ADMIX)
- Permanent
- No VOC’s - environmentally friendly
- Low consumption / economical

Product Comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>AQUAFIN®-IC-ADMIX</th>
<th>AQUAFIN®-IC-ADMIX-Plus</th>
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</thead>
<tbody>
<tr>
<td>„Immediately“ water resistant</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Standard sealing time</td>
<td>1 - 4 weeks</td>
<td>Instant</td>
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<tr>
<td>Liquid admixture</td>
<td>Yes</td>
<td>Yes</td>
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<td>Alters mix design</td>
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<td>No</td>
</tr>
<tr>
<td>NSF/ANSI 61 certified for potable water</td>
<td>Yes</td>
<td>Undergoing testing</td>
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<tr>
<td>Cured concrete is „breathable“</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Hydrophobic</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Qualifies for LEED points</td>
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<td>Yes</td>
</tr>
</tbody>
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